

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

**Quarterly Report Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934**

For the Quarterly Period Ended June 30, 2021

Commission File Number 001-32924

GREEN PLAINS INC.

(Exact name of registrant as specified in its charter)

Iowa

(State or other jurisdiction of incorporation or organization)

84-1652107

(I.R.S. Employer Identification No.)

1811 Aksarben Drive, Omaha, NE 68106

(Address of principal executive offices, including zip code)

(402) 884-8700

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading Symbol</u>	<u>Name of each exchange on which registered</u>
Common Stock, par value \$0.001 per share	GPPE	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

The number of shares of common stock, par value \$0.001 per share, outstanding as of July 29, 2021, was 48,187,210 shares.

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Commonly Used Defined Terms*Green Plains Inc. and Subsidiaries:*

Green Plains; the company	Green Plains Inc. and its subsidiaries
BioProcess Algae	BioProcess Algae LLC
FQT	Fluid Quip Technologies, LLC
Green Plains Cattle; GPCC	Green Plains Cattle Company LLC
Green Plains Commodity Management	Green Plains Commodity Management LLC
Green Plains Grain	Green Plains Grain Company LLC
Green Plains Mount Vernon; Mount Vernon	Green Plains Mount Vernon LLC
Green Plains Obion; Obion	Green Plains Obion LLC
Green Plains Partners; the partnership	Green Plains Partners LP
Green Plains Shenandoah; Shenandoah	Green Plains Shenandoah LLC
Green Plains Trade	Green Plains Trade Group LLC
Green Plains Wood River; Wood River	Green Plains Wood River LLC

Accounting Defined Terms:

ASC	Accounting Standards Codification
EBITDA	Earnings before interest, income taxes, depreciation and amortization
EPS	Earnings per share
Exchange Act	Securities Exchange Act of 1934, as amended
GAAP	U.S. Generally Accepted Accounting Principles
LIBOR	London Interbank Offered Rate
SEC	Securities and Exchange Commission

Industry and Other Defined Terms:

CAFE	Corporate Average Fuel Economy
CARB	California Air Resources Board
the CARES Act	Coronavirus Aid, Relief, and Economic Security Act
COVID-19	Coronavirus Disease 2019
CST	Clean Sugar Technology
DOE	Department of Energy
E10	Gasoline blended with up to 10% ethanol by volume
E15	Gasoline blended with up to 15% ethanol by volume
E85	Gasoline blended with up to 85% ethanol by volume
EIA	U.S. Energy Information Administration
EPA	U.S. Environmental Protection Agency
GNS	Grain Neutral Spirits
MmBtu	Million British Thermal Units
Mmg	Million gallons
MTBE	Methyl tertiary-butyl ether
MVC	Minimum volume commitment
RFS II	Renewable Fuels Standard II
RIN	Renewable identification number
RVO	Renewable volume obligation
SRE	Small refinery exemption
U.S.	United States
USDA	U.S. Department of Agriculture

Item 1. Financial Statements.

PART 1 – FINANCIAL INFORMATION
GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except share amounts)

	June 30, 2021 (unaudited)	December 31, 2020
ASSETS		
Current assets		
Cash and cash equivalents	\$ 496,932	\$ 233,860
Restricted cash	118,441	40,950
Accounts receivable, net of allowances of \$334 and \$143, respectively	80,298	55,568
Income taxes receivable	1,087	661
Inventories	275,001	269,491
Prepaid expenses and other	16,450	16,531
Derivative financial instruments	41,701	25,292
Total current assets	1,029,910	642,353
Property and equipment, net of accumulated depreciation and amortization of \$535,972 and \$530,194, respectively	808,221	801,690
Operating lease right-of-use assets	65,808	61,883
Other assets	89,015	72,991
Total assets	<u>\$ 1,992,954</u>	<u>\$ 1,578,917</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 102,404	\$ 140,058
Accrued and other liabilities	56,576	38,471
Derivative financial instruments	18,577	20,265
Operating lease current liabilities	16,686	14,902
Short-term notes payable and other borrowings	174,008	140,808
Current maturities of long-term debt	2,376	98,052
Total current liabilities	370,627	452,556
Long-term debt	538,619	287,299
Operating lease long-term liabilities	51,843	49,549
Other liabilities	26,635	12,849
Total liabilities	987,724	802,253
Commitments and contingencies (Note 13)		
Stockholders' equity		
Common stock, \$0.001 par value; 75,000,000 shares authorized; 56,432,808 and 47,470,505 shares issued, and 48,188,352 and 35,657,344 shares outstanding, respectively	60	47
Additional paid-in capital	900,952	740,889
Retained earnings	53,991	39,375
Accumulated other comprehensive income (loss)	694	(2,172)
Treasury stock, 8,244,456 and 11,813,161 shares, respectively	(91,626)	(131,287)
Total Green Plains stockholders' equity	864,071	646,852
Noncontrolling interests	141,159	129,812
Total stockholders' equity	1,005,230	776,664
Total liabilities and stockholders' equity	<u>\$ 1,992,954</u>	<u>\$ 1,578,917</u>

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(unaudited and in thousands, except per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Revenues				
Product revenues	\$ 721,786	\$ 386,640	\$ 1,273,766	\$ 1,018,221
Service revenues	2,632	1,384	4,292	2,672
Total revenues	<u>724,418</u>	<u>388,024</u>	<u>1,278,058</u>	<u>1,020,893</u>
Costs and expenses				
Cost of goods sold (excluding depreciation and amortization expenses reflected below)	639,408	360,896	1,148,641	978,124
Operations and maintenance expenses	6,237	6,603	11,991	12,763
Selling, general and administrative expenses	23,383	20,518	46,901	42,156
Loss (gain) on sale of assets, net	3,825	-	(33,068)	-
Goodwill impairment	-	-	-	24,091
Depreciation and amortization expenses	20,532	19,375	41,213	37,455
Total costs and expenses	<u>693,385</u>	<u>407,392</u>	<u>1,215,678</u>	<u>1,094,589</u>
Operating income (loss)	<u>31,033</u>	<u>(19,368)</u>	<u>62,380</u>	<u>(73,696)</u>
Other income (expense)				
Interest income	441	47	471	640
Interest expense	(19,058)	(9,670)	(50,737)	(19,367)
Other, net	(1,250)	14	(1,240)	850
Total other expense	<u>(19,867)</u>	<u>(9,609)</u>	<u>(51,506)</u>	<u>(17,877)</u>
Income (loss) before income taxes and income from equity method investees	11,166	(28,977)	10,874	(91,573)
Income tax benefit	4,783	11,458	2,921	55,741
Income from equity method investees, net of income taxes	168	12,045	343	20,011
Net income (loss)	16,117	(5,474)	14,138	(15,821)
Net income attributable to noncontrolling interests	6,374	2,740	10,940	8,838
Net income (loss) attributable to Green Plains	<u>\$ 9,743</u>	<u>\$ (8,214)</u>	<u>\$ 3,198</u>	<u>\$ (24,659)</u>
Earnings per share:				
Net income (loss) attributable to Green Plains - basic	<u>\$ 0.21</u>	<u>\$ (0.24)</u>	<u>\$ 0.08</u>	<u>\$ (0.71)</u>
Net income (loss) attributable to Green Plains - diluted	<u>\$ 0.20</u>	<u>\$ (0.24)</u>	<u>\$ 0.07</u>	<u>\$ (0.71)</u>
Weighted average shares outstanding:				
Basic	<u>45,425</u>	<u>34,603</u>	<u>41,581</u>	<u>34,634</u>
Diluted	<u>58,171</u>	<u>34,603</u>	<u>42,675</u>	<u>34,634</u>

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(unaudited and in thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Net income (loss)	\$ 16,117	\$ (5,474)	\$ 14,138	\$ (15,821)
Other comprehensive income (loss), net of tax:				
Unrealized gains (losses) on derivatives arising during the period, net of tax benefit (expense) of (\$1,616), \$428, (\$89) and (\$1,019), respectively	5,131	(1,333)	282	3,199
Reclassification of realized losses (gains) on derivatives, net of tax benefit (expense) of (\$1,246), \$1, (\$812) and \$1,431, respectively	3,961	(7)	2,584	(4,492)
Other comprehensive income (loss), net of tax	9,092	(1,340)	2,866	(1,293)
Share of equity method investees other comprehensive income (loss) arising during the period, net of tax benefit (expense) of \$0, \$5,336, \$0 and (\$8,023), respectively	-	(16,759)	-	25,197
Total other comprehensive income (loss), net of tax	9,092	(18,099)	2,866	23,904
Comprehensive income (loss)	25,209	(23,573)	17,004	8,083
Comprehensive income attributable to noncontrolling interests	6,374	2,740	10,940	8,838
Comprehensive income (loss) attributable to Green Plains	<u>\$ 18,835</u>	<u>\$ (26,313)</u>	<u>\$ 6,064</u>	<u>\$ (755)</u>

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited and in thousands)

	Six Months Ended June 30,	
	2021	2020
Cash flows from operating activities:		
Net income (loss)	\$ 14,138	\$ (15,821)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:		
Depreciation and amortization	41,213	37,455
Amortization of debt issuance costs and debt discount	4,879	10,373
Gain on sale of assets, net	(31,757)	-
Loss on extinguishment of convertible notes	31,636	-
Goodwill impairment	-	24,091
Deferred income taxes	(2,900)	(18,132)
Stock-based compensation	1,967	3,555
Income from equity method investees, net of income taxes	(343)	(20,011)
Distribution from equity method investees, net of income taxes	-	14,326
Other	(217)	(8)
Changes in operating assets and liabilities before effects of business combinations and dispositions:		
Accounts receivable	(22,022)	39,960
Inventories	(15,910)	79,841
Derivative financial instruments	(14,331)	4,000
Prepaid expenses and other assets	(545)	1,220
Accounts payable and accrued liabilities	(39,183)	(65,276)
Current income taxes	(428)	(26,610)
Other	3,591	(3,026)
Net cash provided by (used in) operating activities	(30,212)	65,937
Cash flows from investing activities:		
Purchases of property and equipment, net	(59,899)	(63,881)
Proceeds from the sale of assets	73,846	-
Other investing activities	(4,000)	(4,098)
Net cash provided by (used in) investing activities	9,947	(67,979)
Cash flows from financing activities:		
Proceeds from the issuance of long-term debt	355,000	3,000
Payments of principal on long-term debt	(135,858)	(316)
Proceeds from short-term borrowings	1,682,698	1,237,064
Payments on short-term borrowings	(1,698,731)	(1,301,154)
Payments on extinguishment of convertible debt	(20,861)	-
Payments for repurchase of common stock	-	(11,479)
Payments of cash distributions	(2,790)	(6,887)
Proceeds from issuance of common stock, net	191,134	-
Payments of loan fees	(8,614)	(3,198)
Payments related to tax withholdings for stock-based compensation	(4,480)	(1,288)
Other financing activities	3,330	-
Net cash provided by (used in) financing activities	360,828	(84,258)
Net change in cash, cash equivalents and restricted cash	340,563	(86,300)
Cash, cash equivalents and restricted cash, beginning of period	274,810	269,896
Cash, cash equivalents and restricted cash, end of period	\$ 615,373	\$ 183,596

Continued on the following page

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited and in thousands)

Continued from the previous page

	Six Months Ended June 30,	
	2021	2020
Reconciliation of total cash, cash equivalents and restricted cash:		
Cash and cash equivalents	\$ 496,932	\$ 163,362
Restricted cash	118,441	20,234
Total cash, cash equivalents and restricted cash	<u>\$ 615,373</u>	<u>\$ 183,596</u>
Non-cash financing activity:		
Exchange of 4.00% convertible notes due 2024	<u>\$ 51,000</u>	<u>\$ -</u>
Exchange of common stock held in treasury stock for 4.00% convertible notes due 2024	<u>\$ 39,661</u>	<u>\$ -</u>
Supplemental investing activities:		
Assets disposed of in sale	\$ 40,361	\$ -
Less: liabilities relinquished	(156)	-
Net assets disposed	<u>\$ 40,205</u>	<u>\$ -</u>
Supplemental disclosures of cash flow:		
Cash paid (refunded) for income taxes	<u>\$ 576</u>	<u>\$ (4,757)</u>
Cash paid for interest	<u>\$ 16,675</u>	<u>\$ 11,217</u>
Cash premium paid for extinguishment of convertible notes	<u>\$ 20,861</u>	<u>\$ -</u>

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

1. BASIS OF PRESENTATION, DESCRIPTION OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

References to the Company

References to “Green Plains” or the “company” in the consolidated financial statements and in these notes to the consolidated financial statements refer to Green Plains Inc., an Iowa corporation, and its subsidiaries.

Consolidated Financial Statements

The consolidated financial statements include the company’s accounts and all significant intercompany balances and transactions are eliminated. Unconsolidated entities are included in the financial statements on an equity basis. The company owns a 48.9% limited partner interest and a 2.0% general partner interest in Green Plains Partners LP. Public investors own the remaining 49.1% limited partner interest in the partnership. The company determined that the limited partners in the partnership with equity at risk lack the power, through voting rights or similar rights, to direct the activities that most significantly impact the partnership’s economic performance; therefore, the partnership is considered a variable interest entity. The company, through its ownership of the general partner interest in the partnership, has the power to direct the activities that most significantly affect economic performance and is obligated to absorb losses and has the right to receive benefits that could be significant to the partnership. Therefore, the company is considered the primary beneficiary and consolidates the partnership in the company’s financial statements. The assets of the partnership cannot be used by the company for general corporate purposes. The partnership’s consolidated total assets as of June 30, 2021 and December 31, 2020, excluding intercompany balances, are \$92.4 million and \$91.2 million, respectively, and primarily consist of property and equipment, operating lease right-of-use assets and goodwill. The partnership’s consolidated total liabilities as of June 30, 2021 and December 31, 2020, excluding intercompany balances, are \$105.4 million and \$151.2 million, respectively, which primarily consist of long-term debt as discussed in *Note 8 – Debt* and operating lease liabilities. The liabilities recognized as a result of consolidating the partnership do not represent additional claims on our general assets.

The company also owns a majority interest in BioProcess Algae, a joint venture formed in 2008 as well as a majority interest in Fluid Quip Technologies, LLC with their results being consolidated in our consolidated financial statements.

The accompanying unaudited consolidated financial statements are prepared in accordance with GAAP for interim financial information and the instructions to Form 10-Q and Article 10 of Regulation S-X. Because they do not include all of the information and notes required by GAAP, the consolidated financial statements should be read in conjunction with the company’s annual report on Form 10-K for the year ended December 31, 2020, filed with the SEC on February 16, 2021.

The unaudited financial information reflects adjustments, which are, in the opinion of management, necessary for a fair presentation of results of operations, financial position and cash flows for the periods presented. The adjustments are normal and recurring in nature, unless otherwise noted. Interim period results are not necessarily indicative of the results to be expected for the entire year.

Reclassifications

Certain prior year amounts have been reclassified to conform to the current year presentation. These reclassifications did not affect total revenues, costs and expenses or net income. See *Note 8 – Debt* and *Note 11 – Stockholders’ Equity* for further details.

Revision of Previously Issued Financial Statements

During the third quarter of 2020, the company reported an overstatement of both revenues and cost of goods sold by approximately \$30.0 million within the agribusiness and energy services segment as previously reported for the three and six months ended June 30, 2020. Revenues and cost of goods sold for the three and six months ended June 30, 2020 have been revised to reflect these amounts.

Use of Estimates in the Preparation of Consolidated Financial Statements

The preparation of consolidated financial statements in conformity with GAAP requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. The company bases its estimates on historical experience and assumptions it believes are proper and reasonable under the circumstances and regularly evaluates the appropriateness of its estimates and assumptions. Actual results could differ from those estimates. Key accounting policies, including but not limited to those relating to revenue recognition, carrying value of intangible assets, operating leases, impairment of long-lived assets and goodwill, derivative financial instruments, accounting for income taxes and assets acquired and liabilities assumed in acquisitions, are impacted significantly by judgments, assumptions and estimates used in the preparation of the consolidated financial statements.

Description of Business

The company operates within four business segments: (1) ethanol production, which includes the production of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil, (2) agribusiness and energy services, which includes grain handling and storage, commodity marketing and merchant trading for company-produced and third-party ethanol, distillers grains, corn oil, natural gas and other commodities, (3) food and ingredients, which includes food-grade corn oil and (4) partnership, which includes fuel storage and transportation services. The food and ingredients segment had no activity during the three and six months ended June 30, 2021 and 2020.

Cash and Cash Equivalents

Cash and cash equivalents includes bank deposits as well as short-term, highly liquid investments with original maturities of three months or less.

Restricted Cash

The company has restricted cash, which can only be used for funding letters of credit, for payment towards a revolving credit agreement, or for capital expenditures as specified in certain credit facility agreements. Restricted cash also includes cash margins and securities pledged to commodity exchange clearinghouses and at times, funds in escrow related to acquisition and disposition activities. To the degree these segregated balances are cash and cash equivalents, they are considered restricted cash on the consolidated balance sheets.

Revenue Recognition

The company recognizes revenue when obligations under the terms of a contract with a customer are satisfied. Generally, this occurs with the transfer of control of products or services. Revenue is measured as the amount of consideration expected to be received in exchange for transferring goods or providing services. Sales, value add, and other taxes the company collects concurrent with revenue-producing activities are excluded from revenue.

Sales of ethanol, distillers grains, corn oil, natural gas and other commodities by the company's marketing business are recognized when obligations under the terms of a contract with a customer are satisfied. Generally, this occurs with the transfer of control of products or services. Revenues related to marketing for third parties are presented on a gross basis as the company controls the product prior to the sale to the end customer, takes title of the product and has inventory risk. Unearned revenue is recorded for goods in transit when the company has received payment but control has not yet been transferred to the customer. Revenues for receiving, storing, transferring and transporting ethanol and other fuels are recognized when the product is delivered to the customer.

The company routinely enters into physical-delivery energy commodity purchase and sale agreements. At times, the company settles these transactions by transferring its obligations to other counterparties rather than delivering the physical commodity. Energy trading transactions are reported net as a component of revenue. Revenues include net gains or losses from derivatives related to products sold while cost of goods sold includes net gains or losses from derivatives related to commodities purchased. Revenues also include realized gains and losses on related derivative financial instruments and reclassifications of realized gains and losses on cash flow hedges from accumulated other comprehensive income or loss.

Sales of products, including agricultural commodities, are recognized when control of the product is transferred to the customer, which depends on the agreed upon shipment or delivery terms. Revenues related to grain merchandising are presented gross and include shipping and handling, which is also a component of cost of goods sold. Revenues from grain storage are recognized over time as the services are rendered.

Revenues related to the design, engineering and installation of equipment are recognized over the term of the related contracts as equipment is delivered and installed and services are performed.

A substantial portion of the partnership revenues are derived from fixed-fee commercial agreements for storage, terminal or transportation services. The partnership recognizes revenue upon transfer of control of product from its storage tanks and fuel terminals, when railcar volumetric capacity is provided, and as truck transportation services are performed. To the extent shortfalls associated with minimum volume commitments in the previous four quarters continue to exist, volumes in excess of the minimum volume commitment are applied to those shortfalls. Remaining excess volumes generating operating lease revenue are recognized as incurred.

Shipping and Handling Costs

The company accounts for shipping and handling activities related to contracts with customers as costs to fulfill its promise to transfer the associated products. Accordingly, the company records customer payments associated with shipping and handling costs as a component of revenue, and classifies such costs as a component of cost of goods sold.

Cost of Goods Sold

Cost of goods sold includes direct labor, materials, shipping and plant overhead costs. Direct labor includes all compensation and related benefits of non-management personnel involved in ethanol production. Grain purchasing and receiving costs, excluding labor costs for grain buyers and scale operators, are also included in cost of goods sold. Materials include the cost of corn feedstock, denaturant, and process chemicals. Corn feedstock costs include gains and losses on related derivative financial instruments not designated as cash flow hedges, inbound freight charges, inspection costs and transfer costs, as well as reclassifications of gains and losses on cash flow hedges from accumulated other comprehensive income or loss. Plant overhead consists primarily of plant utilities, repairs and maintenance and outbound freight charges. Shipping costs incurred by the company, including railcar costs, are also reflected in cost of goods sold.

The company uses exchange-traded futures and options contracts and forward purchase and sale contracts to attempt to minimize the effect of price changes on ethanol, grain and natural gas. Exchange-traded futures and options contracts are valued at quoted market prices and settled predominantly in cash. The company is exposed to loss when counterparties default on forward purchase and sale contracts. Grain inventories held for sale and forward purchase and sale contracts are valued at market prices when available or other market quotes adjusted for basis differences, primarily in transportation, between the exchange-traded market and local market where the terms of the contract is based. Changes in forward purchase contracts and exchange-traded futures and options contracts are recognized as a component of cost of goods sold.

Operations and Maintenance Expenses

In the partnership segment, transportation expenses represent the primary component of operations and maintenance expenses. Transportation expenses include railcar leases, freight and shipping of the company's ethanol and co-products, as well as costs incurred storing ethanol at destination terminals.

Derivative Financial Instruments

The company uses various derivative financial instruments, including exchange-traded futures and exchange-traded and over-the-counter options contracts, to attempt to minimize risk and the effect of commodity price changes including but not limited to, corn, ethanol, natural gas, soybean meal and soybean oil. The company monitors and manages this exposure as part of its overall risk management policy to reduce the adverse effect market volatility may have on its operating results. The company may hedge these commodities as one way to mitigate risk; however, there may be situations when these hedging activities themselves result in losses.

By using derivatives to hedge exposures to changes in commodity prices, the company is exposed to credit and market risk. The company's exposure to credit risk includes the counterparty's failure to fulfill its performance obligations under the terms of the derivative contract. The company minimizes its credit risk by entering into transactions with high quality counterparties, limiting the amount of financial exposure it has with each counterparty and monitoring their financial condition. Market risk is the risk that the value of the financial instrument might be adversely affected by a change in commodity prices or interest rates. The company manages market risk by incorporating parameters to monitor exposure within its risk management strategy, which limits the types of derivative instruments and strategies the company can use and the degree of market risk it can take using derivative instruments.

The company evaluates its physical delivery contracts to determine if they qualify for normal purchase or sale exemptions which are expected to be used or sold over a reasonable period in the normal course of business. Contracts that do not meet the normal purchase or sale criteria are recorded at fair value. Changes in fair value are recorded in operating income unless the contracts qualify for, and the company elects, cash flow hedge accounting treatment.

Certain qualifying derivatives related to ethanol production and agribusiness and energy services are designated as cash flow hedges. The company evaluates the derivative instrument to ascertain its effectiveness prior to entering into cash flow hedges. Unrealized gains and losses are reflected in accumulated other comprehensive income or loss until the gain or loss from the underlying hedged transaction is realized and the physical transaction is completed. When it becomes probable a forecasted transaction will not occur, the cash flow hedge treatment is discontinued, which affects earnings. These derivative financial instruments are recognized in current assets or current liabilities at fair value.

At times, the company hedges its exposure to changes in inventory values and designates qualifying derivatives as fair value hedges. The carrying amount of the hedged inventory is adjusted in the current period for changes in fair value. Estimated fair values carried at market are based on exchange-quoted prices, adjusted as appropriate for regional location basis values, which represent differences in local markets, including transportation as well as quality or grade differences. Basis values are generally determined using inputs from broker quotations or other market transactions. However, a portion of the value may be derived using unobservable inputs. Ineffectiveness of the hedges is recognized in the current period to the extent the change in fair value of the inventory is not offset by the change in fair value of the derivative.

Recent Accounting Pronouncements

On January 1, 2021, the company early adopted the amended guidance in ASC 470-20, *Debt - Debt with Conversion and Other Options* and ASC 815-40, *Derivatives and Hedging - Contracts in Entity's Own Equity - Accounting for Convertible Instruments and Contracts in an Equity's Own Equity*. The adoption of this guidance resulted in a \$49.5 million decrease in additional paid-in capital, an \$11.4 million increase in retained earnings and a \$38.1 million increase in long-term debt, which included a \$39.4 million increase in debt principal offset by a \$1.3 million increase in debt issuance costs, resulting from amounts previously bifurcated to equity being reclassified to debt. See *Note 8 – Debt* and *Note 11 – Stockholders' Equity* for further details.

In March 2020, the FASB issued amended guidance in ASC 848, *Reference Rate Reform - Facilitation of the Effects of Reference Rate Reform on Financial Reporting*, and a subsequent update in January 2021, which provides optional expedients and exceptions to U.S. GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burden related to the expected market transition from the LIBOR and other interbank offered rates to alternative reference rates. The expedients and exceptions provided by the amended guidance do not apply to contract modifications made and hedging relationships entered into or evaluated after December 31, 2022, except for hedging relationships existing as of December 31, 2022, that an entity has elected certain optional expedients for and that are retained through the end of the hedging relationship. The guidance is effective upon issuance and to be applied prospectively from any date beginning March 12, 2020 through December 31, 2022. The amended guidance is not expected to have a material impact on the company's consolidated financial statements.

In December 2019, the FASB issued amended guidance in ASC 740, *Income Taxes - Simplifying the Accounting for Income Taxes*, which simplifies the accounting for income taxes by removing certain exceptions to the general principles in ASC 740. The amendments also improve consistent application of and simplify U.S. GAAP for other areas of ASC 740 by clarifying and amending existing guidance. The amendments are effective for fiscal years beginning after December 15, 2021, and interim periods within fiscal years beginning after December 15, 2022. Early adoption of the amendments is permitted. The company is evaluating the impact of this standard on its consolidated financial statements.

2. REVENUE

Revenue Recognition

Revenue is recognized when obligations under the terms of a contract with a customer are satisfied. Generally, this occurs with the transfer of control of products or services. Revenue is measured as the amount of consideration expected to be received in exchange for transferring goods or providing services. Sales, value add, and other taxes the company collects concurrent with revenue-producing activities are excluded from revenue.

Revenue by Source

The following tables disaggregate revenue by major source (in thousands):

	Three Months Ended June 30, 2021				
	Ethanol Production	Agribusiness & Energy Services	Partnership	Eliminations	Total
Revenues:					
Revenues from contracts with customers under ASC 606:					
Ethanol	\$ -	\$ -	\$ -	\$ -	\$ -
Distillers grains	4,425	-	-	-	4,425
Corn oil	-	-	-	-	-
Service revenues	1,462	-	1,159	-	2,621
Other	12,367	2,217	-	-	14,584
Intersegment revenues	-	-	2,172	(2,172)	-
Total revenues from contracts with customers	18,254	2,217	3,331	(2,172)	21,630
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :					
Ethanol	413,592	138,931	-	-	552,523
Distillers grains	95,465	9,015	-	-	104,480
Corn oil	25,349	7,775	-	-	33,124
Grain	-	10,798	-	-	10,798
Other	2,613	(761)	-	-	1,852
Intersegment revenues	-	5,512	-	(5,512)	-
Total revenues from contracts accounted for as derivatives	537,019	171,270	-	(5,512)	702,777
Leasing revenues under ASC 842 ⁽²⁾ :	-	-	16,370	(16,359)	11
Total Revenues	\$ 555,273	\$ 173,487	\$ 19,701	\$ (24,043)	\$ 724,418

	Six Months Ended June 30, 2021				
	Ethanol Production	Agribusiness & Energy Services	Partnership	Eliminations	Total
Revenues:					
Revenues from contracts with customers under ASC 606:					
Ethanol	\$ -	\$ -	\$ -	\$ -	\$ -
Distillers grains	8,038	-	-	-	8,038
Corn oil	-	-	-	-	-
Service revenues	2,025	-	2,216	-	4,241
Other	16,429	3,043	-	-	19,472
Intersegment revenues	-	-	4,178	(4,178)	-
Total revenues from contracts with customers	26,492	3,043	6,394	(4,178)	31,751
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :					
Ethanol	703,177	214,843	-	-	918,020
Distillers grains	191,159	18,254	-	-	209,413
Corn oil	39,889	12,586	-	-	52,475
Grain	-	22,968	-	-	22,968
Other	18,278	25,102	-	-	43,380
Intersegment revenues	-	10,635	-	(10,635)	-
Total revenues from contracts accounted for as derivatives	952,503	304,388	-	(10,635)	1,246,256
Leasing revenues under ASC 842 ⁽²⁾ :	-	-	33,713	(33,662)	51
Total Revenues	\$ 978,995	\$ 307,431	\$ 40,107	\$ (48,475)	\$ 1,278,058

	Three Months Ended June 30, 2020				
	Ethanol Production	Agribusiness & Energy Services	Partnership	Eliminations	Total
Revenues:					
Revenues from contracts with customers under ASC 606:					
Ethanol	\$ -	\$ -	\$ -	\$ -	\$ -
Distillers grains	4,589	-	-	-	4,589
Service revenues	-	-	1,267	-	1,267
Other	1,232	1,870	-	-	3,102
Intersegment revenues	25	-	1,838	(1,863)	-
Total revenues from contracts with customers	5,846	1,870	3,105	(1,863)	8,958
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :					
Ethanol	218,816	60,942	-	-	279,758
Distillers grains	55,635	13,555	-	-	69,190
Corn oil	9,504	12,146	-	-	21,650
Grain	-	7,724	-	-	7,724
Other	741	(114)	-	-	627
Intersegment revenues	-	4,368	-	(4,368)	-
Total revenues from contracts accounted for as derivatives	284,696	98,621	-	(4,368)	378,949
Leasing revenues under ASC 842 ⁽²⁾ :	-	-	17,276	(17,159)	117
Total Revenues	<u>\$ 290,542</u>	<u>\$ 100,491</u>	<u>\$ 20,381</u>	<u>\$ (23,390)</u>	<u>\$ 388,024</u>

	Six Months Ended June 30, 2020				
	Ethanol Production	Agribusiness & Energy Services	Partnership	Eliminations	Total
Revenues:					
Revenues from contracts with customers under ASC 606:					
Ethanol	\$ -	\$ -	\$ -	\$ -	\$ -
Distillers grains	21,064	-	-	-	21,064
Service revenues	-	-	2,446	-	2,446
Other	4,191	2,260	-	-	6,451
Intersegment revenues	50	-	3,912	(3,962)	-
Total revenues from contracts with customers	25,305	2,260	6,358	(3,962)	29,961
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :					
Ethanol	585,908	187,035	-	-	772,943
Distillers grains	128,162	18,264	-	-	146,426
Corn oil	24,188	17,876	-	-	42,064
Grain	6	15,674	-	-	15,680
Other	2,698	10,895	-	-	13,593
Intersegment revenues	-	11,676	-	(11,676)	-
Total revenues from contracts accounted for as derivatives	740,962	261,420	-	(11,676)	990,706
Leasing revenues under ASC 840 ⁽²⁾ :	-	-	34,294	(34,068)	226
Total Revenues	<u>\$ 766,267</u>	<u>\$ 263,680</u>	<u>\$ 40,652</u>	<u>\$ (49,706)</u>	<u>\$ 1,020,893</u>

- (1) Revenues from contracts accounted for as derivatives represent physically settled derivative sales that are outside the scope of ASC 606, where the company recognizes revenue when control of the inventory is transferred within the meaning of ASC 606 as required by ASC 610-20, *Gains and Losses from Derecognition of Nonfinancial Assets*.
- (2) Leasing revenues do not represent revenues recognized from contracts with customers under ASC 606, and are accounted for under ASC 842, *Leases*.

Major Customers

No single customer's revenue was over 10% of total revenues for the three or six months ended June 30, 2021. Revenues from Customer A represented 13% and 17% of total revenues for the three and six months ended June 30, 2020, respectively. Revenues from this customer are reported in the ethanol production segment.

3. ACQUISITIONS AND DISPOSITIONS

Acquisition of a Majority Interest in Fluid Quip Technologies, LLC

On December 9, 2020, the company acquired a majority interest in Fluid Quip Technologies, LLC. During the second quarter of 2021, the company identified additional information through analysis of the final FQT acquisition agreements that resulted in a reassessment of certain contingent considerations related to potential earn-out payments which identified an understatement of other long term assets by \$16.7 million, accrued liabilities of \$2.4 million, long term other liabilities of \$12.4 million and noncontrolling interests of \$1.9 million as previously reported within ethanol production segment as of March 31, 2021 and December 31, 2020.

Disposition of Ord Ethanol Plant

On March 22, 2021, the company completed the sale of the plant located in Ord, Nebraska and certain related assets, to GreenAmerica Biofuels Ord LLC (the "Ord Transaction") for a sale price of \$64.0 million, plus working capital of \$9.8 million. Correspondingly, the company entered into a separate asset purchase agreement with the Partnership to acquire the storage assets and assign the rail transportation assets to be disposed of in the Ord Transaction for \$27.5 million, which was used to pay down a portion of the partnership's credit facility. The divested assets were reported within the company's ethanol production, agribusiness and energy services and partnership segments. The company recorded a pretax gain on the sale of the Ord plant of \$35.9 million within corporate activities.

The asset and liabilities of the Ord ethanol plant at closing on March 22, 2021 were as follows: (in thousands):

Amounts of Identifiable Assets Disposed and Liabilities Relinquished	
Inventory	\$ 10,400
Prepaid expenses and other	632
Property and equipment	24,285
Accrued and other liabilities	(156)
Total identifiable net assets disposed	<u>\$ 35,161</u>

The amounts reflected above represent working capital estimates, which are considered preliminary until contractual post-closing working capital adjustments are finalized. The operating lease right-of-use assets and lease liabilities associated with the railcar operating leases, currently estimated at approximately \$1.8 million, respectively, will be extinguished upon the assignment of the associated leases to GreenAmerica Biofuels Ord LLC, which occurred in July of 2021.

Disposition of Hereford Ethanol Plant

On December 28, 2020, the company completed the sale of the plant located in Hereford, Texas, and certain related assets, to Hereford Ethanol Partners, L.P. There were no material changes to the assets disposed and liabilities relinquished from the disposition of the Hereford plant during the three and six months ended June 30, 2021.

Disposition of Equity Interest in Green Plains Cattle Company LLC

On October 1, 2020, pursuant to the Securities Purchase Agreement, the company sold its remaining 50% joint venture interest in GPCC to AGR, TGAM Agribusiness Fund LP and StepStone (the "Buyers") for \$80.5 million in cash, plus closing adjustments. The transaction resulted in a reduction in other assets of \$69.7 million as a result of the removal of the equity method investment in GPCC, and a reduction in accumulated other comprehensive income (loss) of \$10.7 million as a result of the removal of the company's share of equity method investees accumulated other comprehensive loss. Transaction fees related to the disposal were not material. There was no material gain or loss recorded as part of this transaction. The Securities Purchase Agreement contains certain earn-out provisions of up to \$4.0 million to be paid to the Buyers if certain EBITDA thresholds are met. The company will record any contingent amounts associated with the earn-out provision in the consolidated financial statements when the amount is probable and reasonably determinable.

4. FAIR VALUE DISCLOSURES

The following methods, assumptions and valuation techniques were used in estimating the fair value of the company's financial instruments:

Level 1 – unadjusted quoted prices in active markets for identical assets or liabilities the company can access at the measurement date.

Level 2 – directly or indirectly observable inputs such as quoted prices for similar assets or liabilities in active markets other than quoted prices included within Level 1, quoted prices for identical or similar assets in markets that are not active, and other inputs that are observable or can be substantially corroborated by observable market data through correlation or other means. Grain inventories held for sale in the agribusiness and energy services segment are valued at nearby futures values, plus or minus nearby basis values, which represent differences in local markets including transportation or commodity quality or grade differences.

Level 3 – unobservable inputs that are supported by little or no market activity and comprise a significant component of the fair value of the assets or liabilities. The company currently does not have any recurring Level 3 financial instruments.

Derivative contracts include exchange-traded commodity futures and options contracts and forward commodity purchase and sale contracts. Exchange-traded futures and options contracts are valued based on unadjusted quoted prices in active markets and are classified in Level 1. The majority of the company's exchange-traded futures and options contracts are cash-settled on a daily basis.

There have been no changes in valuation techniques and inputs used in measuring fair value. The company's assets and liabilities by level are as follows (in thousands):

	Fair Value Measurements at June 30, 2021		
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total
Assets:			
Cash and cash equivalents	\$ 496,932	\$ -	\$ 496,932
Restricted cash	118,441	-	118,441
Inventories carried at market	-	50,617	50,617
Unrealized gains on derivatives	-	41,377	41,377
Other assets	111	43	154
Total assets measured at fair value	<u>\$ 615,484</u>	<u>\$ 92,037</u>	<u>\$ 707,521</u>
Liabilities:			
Accounts payable ⁽¹⁾	\$ -	\$ 19,488	\$ 19,488
Accrued and other liabilities ⁽²⁾	-	2,424	2,424
Unrealized losses on derivatives	-	12,579	12,579
Other liabilities ⁽²⁾	-	12,498	12,498
Total liabilities measured at fair value	<u>\$ -</u>	<u>\$ 46,989</u>	<u>\$ 46,989</u>

Fair Value Measurements at December 31, 2020

	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total
Assets:			
Cash and cash equivalents	\$ 233,860	\$ -	\$ 233,860
Restricted cash	40,950	-	40,950
Inventories carried at market	-	77,900	77,900
Unrealized gains on derivatives	-	21,956	21,956
Other assets	112	29	141
Total assets measured at fair value	\$ 274,922	\$ 99,885	\$ 374,807
Liabilities:			
Accounts payable ⁽¹⁾	\$ -	\$ 19,355	\$ 19,355
Unrealized losses on derivatives	-	10,997	10,997
Total liabilities measured at fair value	\$ -	\$ 30,352	\$ 30,352

(1) Accounts payable is generally stated at historical amounts with the exception of \$19.5 million and \$19.4 million at June 30, 2021 and December 31, 2020, respectively, related to certain delivered inventory for which the payable fluctuates based on changes in commodity prices. These payables are hybrid financial instruments for which the company has elected the fair value option.

(2) As of June 30, 2021, accrued and other liabilities includes \$2.4 million and other liabilities includes \$12.5 million of consideration related to potential earn-out payments recorded at fair value.

The fair value of the company's debt was approximately \$759.8 million compared with a book value of \$726.2 million, excluding debt issuance costs, at June 30, 2021. The fair value of the company's debt was approximately \$535.9 million compared with a book value of \$526.2 million at December 31, 2020. The company estimated the fair value of its convertible notes using Level 1 inputs, and the fair value of its other outstanding debt using Level 2 inputs. The company believes the fair values of its accounts receivable approximated book value, which was \$80.3 million and \$55.6 million at June 30, 2021 and December 31, 2020, respectively.

Although the company currently does not have any recurring Level 3 financial measurements, the fair values of tangible and intangible assets and goodwill acquired represent Level 3 measurements which were derived using a combination of the income approach, market approach and cost approach for the specific assets or liabilities being valued.

5. SEGMENT INFORMATION

The company reports the financial and operating performance for the following four operating segments: (1) ethanol production, which includes the production of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil, (2) agribusiness and energy services, which includes grain handling and storage, commodity marketing and merchant trading for company-produced and third-party ethanol, distillers grains, corn oil, natural gas and other commodities, (3) food and ingredients, which includes food-grade corn oil and (4) partnership, which includes fuel storage and transportation services. The food and ingredients segment, had no activity during the three and six months ended June 30, 2021 and 2020.

Corporate activities include selling, general and administrative expenses, consisting primarily of compensation, professional fees and overhead costs not directly related to a specific operating segment.

During the normal course of business, the operating segments conduct business with each other. For example, the agribusiness and energy services segment procures grain and natural gas and sells products, including ethanol, distillers grains and corn oil for the ethanol production segment. The partnership segment provides fuel storage and transportation services for the ethanol production segment. These intersegment activities are treated like third-party transactions with origination, marketing and storage fees charged at estimated market values. Consequently, these transactions affect segment performance; however, they do not impact the company's consolidated results since the revenues and corresponding costs are eliminated.

The following tables set forth certain financial data for the company's operating segments (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Revenues:				
Ethanol production:				
Revenues from external customers	\$ 555,273	\$ 290,517	\$ 978,995	\$ 766,217
Intersegment revenues	-	25	-	50
Total segment revenues	555,273	290,542	978,995	766,267
Agribusiness and energy services:				
Revenues from external customers	167,975	96,123	296,796	252,004
Intersegment revenues	5,512	4,368	10,635	11,676
Total segment revenues	173,487	100,491	307,431	263,680
Partnership:				
Revenues from external customers	1,170	1,384	2,267	2,672
Intersegment revenues	18,531	18,997	37,840	37,980
Total segment revenues	19,701	20,381	40,107	40,652
Revenues including intersegment activity	748,461	411,414	1,326,533	1,070,599
Intersegment eliminations	(24,043)	(23,390)	(48,475)	(49,706)
Total Revenues	\$ 724,418	\$ 388,024	\$ 1,278,058	\$ 1,020,893

Refer to Note 2 - Revenue, for further disaggregation of revenue by operating segment.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Cost of goods sold:				
Ethanol production	\$ 493,656	\$ 284,174	\$ 909,181	\$ 773,324
Agribusiness and energy services	170,181	95,803	286,255	252,305
Intersegment eliminations	(24,429)	(19,081)	(46,795)	(47,505)
	\$ 639,408	\$ 360,896	\$ 1,148,641	\$ 978,124

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Operating income (loss):				
Ethanol production ⁽¹⁾	\$ 33,543	\$ (18,792)	\$ 13,223	\$ (79,573)
Agribusiness and energy services	(851)	351	12,495	2,911
Partnership	11,916	12,225	24,787	24,655
Intersegment eliminations	386	(4,283)	(1,680)	(2,150)
Corporate activities ⁽²⁾	(13,961)	(8,869)	13,555	(19,539)
	\$ 31,033	\$ (19,368)	\$ 62,380	\$ (73,696)

(1) Operating loss for ethanol production includes a goodwill impairment charge of \$24.1 million for the six months ended June 30, 2020.

(2) Corporate activities for the three and six months ended June 30, 2021 include a \$3.8 million loss on sale of assets and a \$33.1 million gain on sale of assets, respectively.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Depreciation and amortization:				
Ethanol production	\$ 18,483	\$ 17,184	\$ 37,011	\$ 33,082
Agribusiness and energy services	595	556	1,202	1,109
Partnership	795	966	1,682	1,927
Corporate activities	659	669	1,318	1,337
	\$ 20,532	\$ 19,375	\$ 41,213	\$ 37,455

The following table sets forth total assets by operating segment (in thousands):

	June 30, 2021	December 31, 2020
Total assets ⁽¹⁾ :		
Ethanol production	\$ 1,092,196	\$ 900,963
Agribusiness and energy services	394,139	378,720
Partnership	92,389	91,205
Corporate assets	485,648	228,074
Intersegment eliminations	(71,418)	(20,045)
	<u>\$ 1,992,954</u>	<u>\$ 1,578,917</u>

(1) Asset balances by segment exclude intercompany balances.

6. INVENTORIES

Inventories are carried at the lower of cost or net realizable value, except grain held for sale and fair-value hedged inventories. Commodities held for sale are reported at market value. As of June 30, 2021, the company recorded a \$0.7 million lower of cost or net realized value inventory adjustment reflected in cost of goods sold within the ethanol production segment. There was no lower of cost or net realizable value inventory adjustment as of December 31, 2020.

The components of inventories are as follows (in thousands):

	June 30, 2021	December 31, 2020
Finished goods	\$ 117,550	\$ 89,223
Commodities held for sale	25,182	40,147
Raw materials	74,855	90,800
Work-in-process	21,402	13,201
Supplies and parts	36,012	36,120
	<u>\$ 275,001</u>	<u>\$ 269,491</u>

7. DERIVATIVE FINANCIAL INSTRUMENTS

At June 30, 2021, the company's consolidated balance sheet reflected unrealized gains of \$0.7 million, net of tax, in accumulated other comprehensive income (loss). The company expects these losses will be reclassified to operating income over the next 12 months as a result of hedged transactions that are forecasted to occur. The amount realized in operating income will differ as commodity prices change.

Fair Values of Derivative Instruments

The fair values of the company's derivative financial instruments and the line items on the consolidated balance sheets where they are reported are as follows (in thousands):

	Asset Derivatives' Fair Value		Liability Derivatives' Fair Value	
	June 30, 2021	December 31, 2020	June 30, 2021	December 31, 2020
	Derivative financial instruments	\$ 41,377 (1)	\$ 21,956 (2)	\$ 12,579 (3)
Other assets	43	29	-	-
Other liabilities	-	-	36	-
Total	<u>\$ 41,420</u>	<u>\$ 21,985</u>	<u>\$ 12,615</u>	<u>\$ 10,997</u>

- (1) At June 30, 2021, derivative financial instruments, as reflected on the balance sheet, includes net unrealized gains on exchange traded futures and options contracts of \$0.3 million.
(2) At December 31, 2020, derivative financial instruments, as reflected on the balance sheet, includes net unrealized gains on exchange traded futures and options contracts of \$3.3 million, which include \$2.8 million of net unrealized gains on derivative financial instruments designated as cash flow hedging instruments.
(3) At June 30, 2021, derivative financial instruments, as reflected on the balance sheet, includes net unrealized losses on exchange traded futures and options contracts of \$6.0 million, which included \$2.6 million of net unrealized losses on derivative financial instruments designated as cash flow hedging instruments.
(4) At December 31, 2020, derivative financial instruments, as reflected on the balance sheet, includes net unrealized losses on exchange traded futures and options contracts of \$9.3 million, none of which were designated as cash flow hedging instruments.

Refer to Note 4 - Fair Value Disclosures, which contains fair value information related to derivative financial instruments.

Effect of Derivative Instruments on Consolidated Balance Sheets, Consolidated Statements of Operations and Consolidated Statements of Comprehensive Income

The gains or losses recognized in income and other comprehensive income related to the company's derivative financial instruments and the line items on the consolidated financial statements where they are reported are as follows (in thousands):

Location of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income into Income	Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income into Income			
	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Revenues	\$ (23,692)	\$ 6	\$ (38,880)	\$ 8,824
Cost of goods sold	18,485	-	35,484	(2,901)
Net gain (loss) recognized in income (loss) before income taxes	<u>\$ (5,207)</u>	<u>\$ 6</u>	<u>\$ (3,396)</u>	<u>\$ 5,923</u>

Gain (Loss) Recognized in Other Comprehensive Income on Derivatives	Amount of Gain (Loss) Recognized in Other Comprehensive Income on Derivatives			
	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Commodity contracts	<u>\$ 6,747</u>	<u>\$ (1,761)</u>	<u>\$ 371</u>	<u>\$ 4,218</u>

Derivatives Not Designated as Hedging Instruments	Location of Gain (Loss) Recognized in Income on Derivatives	Amount of Gain (Loss) Recognized in Income on Derivatives			
		Three Months Ended June 30,		Six Months Ended June 30,	
		2021	2020	2021	2020
Commodity contracts	Revenues	\$ (11,101)	\$ (15,598)	\$ (51,895)	\$ 29,809
Commodity contracts	Costs of goods sold	2,991	9,173	11,554	6,494
Net gain (loss) recognized in income (loss) before income taxes		\$ (8,110)	\$ (6,425)	\$ (40,341)	\$ 36,303

The following amounts were recorded on the consolidated balance sheets related to cumulative basis adjustments for the fair value hedged items (in thousands):

Line Item in the Consolidated Balance Sheet in Which the Hedged Item is Included	June 30, 2021		December 31, 2020	
	Carrying Amount of the Hedged Assets	Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Assets	Carrying Amount of the Hedged Assets	Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Assets
Inventories	\$ 38,276	\$ 12,459	\$ 53,963	\$ 9,041

Effect of Cash Flow and Fair Value Hedge Accounting on the Statements of Operations

The effect of cash flow and fair value hedges and the line items on the consolidated statements of operations where they are reported are as follows (in thousands):

	Location and Amount of Gain (Loss) Recognized in Income on Cash Flow and Fair Value Hedging Relationships for the Three Months Ended June 30,			
	2021		2020	
	Revenue	Cost of Goods Sold	Revenue	Cost of Goods Sold
Gain (loss) on cash flow hedging relationships:				
Commodity contracts:				
Amount of gain reclassified from accumulated other comprehensive income into income	\$ (23,692)	\$ 18,485	\$ 6	\$ -
Gain (loss) on fair value hedging relationships:				
Commodity contracts:				
Hedged item	-	10,406	-	(335)
Derivatives designated as hedging instruments	-	(7,244)	-	486
Total amounts of income and expense line items presented in the statement of operations in which the effects of cash flow or fair value hedges are recorded	\$ (23,692)	\$ 21,647	\$ 6	\$ 151

**Location and Amount of Gain (Loss) Recognized in
Income on Cash Flow and Fair Value Hedging
Relationships for the Six Months Ended June 30,**

	2021		2020	
	Revenue	Cost of Goods Sold	Revenue	Cost of Goods Sold
Gain (loss) on cash flow hedging relationships:				
Commodity contracts:				
Amount of gain (loss) reclassified from accumulated other comprehensive income into income	\$ (38,880)	\$ 35,484	\$ 8,824	\$ (2,901)
Gain (loss) on fair value hedging relationships:				
Commodity contracts:				
Hedged item	-	18,373	-	(7,929)
Derivatives designated as hedging instruments	-	(14,352)	-	8,600
Total amounts of income and expense line items presented in the statement of operations in which the effects of cash flow or fair value hedges are recorded	<u>\$ (38,880)</u>	<u>\$ 39,505</u>	<u>\$ 8,824</u>	<u>\$ (2,230)</u>

There were no gains or losses from discontinuing cash flow or fair value hedge treatment during the three and six months ended June 30, 2021 and 2020.

The open commodity derivative positions as of June 30, 2021, are as follows (in thousands):

Derivative Instruments	Exchange Traded ⁽¹⁾	Non-Exchange Traded ⁽²⁾		Unit of Measure	Commodity
	Net Long & (Short)	Long	(Short)		
Futures	(35,475)			Bushels	Corn and Soybeans
Futures	19,750 ⁽³⁾			Bushels	Corn
Futures	(3,515) ⁽⁴⁾			Bushels	Corn
Futures	(106,764)			Gallons	Ethanol
Futures	(57,120) ⁽³⁾			Gallons	Ethanol
Futures	14,987			MmBTU	Natural Gas
Futures	(3,688) ⁽⁴⁾			MmBTU	Natural Gas
Futures	45			Tons	Soybean Meal
Futures	(51,120)			Pounds	Soybean Oil
Options	57,519			Pounds	Soybean Oil
Options	102			Bushels	Corn
Options	958			Gallons	Ethanol
Options	(3,605)			MmBTU	Natural Gas
Forwards		51,884	(194)	Bushels	Corn and Soybeans
Forwards		-	(186,295)	Gallons	Ethanol
Forwards		108	(298)	Tons	Distillers Grains
Forwards		15,168	(45,562)	Pounds	Corn Oil
Forwards		9,738	(1,257)	MmBTU	Natural Gas

(1) Exchange traded futures and options are presented on a net long and (short) position basis. Options are presented on a delta-adjusted basis.

(2) Non-exchange traded forwards are presented on a gross long and (short) position basis including both fixed-price and basis contracts.

(3) Futures used for cash flow hedges.

(4) Futures used for fair value hedges.

Energy trading contracts that do not involve physical delivery are presented net in revenues on the consolidated statements of operations. Included in revenues are net gains on energy trading contracts of \$24 thousand and \$0.5 million for the three and six months ended June 30, 2021, respectively, and net losses on energy trading contracts of \$0.1 million and net gains on energy trading contracts of \$3.0 million for the three and six months ended June 30, 2020, respectively.

8. DEBT

On January 1, 2021, the company early adopted the amended guidance in ASC 470-20, using the modified retrospective method of transition. The adoption of this guidance resulted in a \$49.5 million decrease in additional paid-in capital, an \$11.4 million increase in retained earnings and a \$38.1 million increase in long-term debt, which included a \$39.4 million increase in debt principal offset by a \$1.3 million increase in debt issuance costs, resulting from amounts previously bifurcated to equity being reclassified to debt.

The components of long-term debt are as follows (in thousands):

	June 30, 2021	December 31, 2020
Corporate: ⁽¹⁾		
2.25% convertible notes due 2027 ⁽²⁾	\$ 230,000	\$ -
4.00% convertible notes due 2024 ⁽³⁾	64,000	89,125
4.125% convertible notes due 2022 ⁽⁴⁾	34,316	156,441
Green Plains SPE LLC:		
\$125.0 million junior secured mezzanine notes due 2026 ⁽⁵⁾	125,000	-
Green Plains Wood River and Green Plains Shenandoah:		
\$75.0 million delayed draw loan agreement ⁽⁶⁾	30,000	30,000
Green Plains Partners:		
\$135.0 million credit facility ⁽⁷⁾	53,166	100,000
Other	15,749	15,936
Total book value of long-term debt	552,231	391,502
Unamortized debt issuance costs	(11,236)	(6,151)
Less: current maturities of long-term debt	(2,376)	(98,052)
Total long-term debt	\$ 538,619	\$ 287,299

(1) See discussion on early adoption of the amended guidance in ASC 470-20 above.

(2) Includes \$7.1 million of unamortized debt issuance costs as of June 30, 2021.

(3) See discussion below regarding the exchange of convertible notes due in 2024. Includes \$1.4 million and \$2.2 million of unamortized debt issuance costs as of June 30, 2021 and December 31, 2020, respectively.

(4) See discussion below regarding the repurchase of convertible notes due in 2022. Includes \$0.2 million and \$1.3 million of unamortized debt issuance costs as of June 30, 2021 and December 31, 2020, respectively.

(5) Includes \$1.0 million of unamortized debt issuance costs as of June 30, 2021.

(6) Includes \$0.3 million of unamortized debt issuance costs as of both June 30, 2021 and December 31, 2020, respectively.

(7) Includes \$1.2 million and \$2.3 million of unamortized debt issuance costs as of June 30, 2021 and December 31, 2020, respectively. Subsequent to June 30, 2021, the partnership refinanced its credit facility. See Note 15 – *Subsequent Events* for further details.

The components of short-term notes payable and other borrowings are as follows (in thousands):

	June 30, 2021	December 31, 2020
Green Plains Trade:		
\$300.0 million revolver	\$ 100,769	\$ 79,251
Green Plains Grain:		
\$100.0 million revolver	55,000	38,700
\$50.0 million inventory financing	-	-
Green Plains Commodity Management:		
\$30.0 million hedge line	18,239	21,682
Other	-	1,175
	\$ 174,008	\$ 140,808

Corporate Activities

In March 2021, the company issued an aggregate \$230.0 million of 2.25% convertible senior notes due in 2027, or the 2.25% notes. The 2.25% notes bear interest at a rate of 2.25% per year, payable on March 15 and September 15 of each year, beginning September 15, 2021, and mature on March 15, 2027. The 2.25% notes are senior, unsecured obligations of the company. The 2.25% notes are convertible, at the option of the holders, into consideration consisting of, at the company's election, cash, shares of the company's common stock, or a combination of cash and stock (and cash in lieu of fractional shares). However, before September 15, 2026, the 2.25% notes will not be convertible unless certain conditions are satisfied. The initial conversion rate is 31.6206 shares of the company's common stock per \$1,000 principal amount of 2.25% notes

(equivalent to an initial conversion price of approximately \$31.62 per share of the company's common stock), representing an approximately 37.5% premium over the offering price of the company's common stock. The conversion rate is subject to adjustment upon the occurrence of certain events, including but not limited to; the event of a stock dividend or stock split; the issuance of additional rights, options and warrants; spinoffs; the event of a cash dividend or distribution; or a tender or exchange offering. In addition, the company may be obligated to increase the conversion rate for any conversion that occurs in connection with certain corporate events, including the company's calling the 2.25% notes for redemption.

On and after March 15, 2024, and prior to the maturity date, the company may redeem, for cash, all, but not less than all, of the 2.25% notes if the last reported sale price of the company's common stock equals or exceeds 140% of the applicable conversion price on (i) at least 20 trading days during a 30 consecutive trading day period ending on the trading day immediately prior to the date the company delivers notice of the redemption; and (ii) the trading day immediately before the date of the redemption notice. The redemption price will equal 100% of the principal amount of the 2.25% notes to be redeemed, plus any accrued and unpaid interest to, but excluding, the redemption date. In addition, upon the occurrence of a "fundamental change" (as defined in the indenture for the 2.25% notes), holders of the 2.25% notes will have the right, at their option, to require the company to repurchase their 2.25% notes for cash at a price equal to 100% of the principal amount of the 2.25% notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

During June 2019, the company issued an aggregate \$115.0 million of 4.00% convertible senior notes due in 2024, or the 4.00% notes. The 4.00% notes are senior, unsecured obligations of the company, with interest payable on January 1 and July 1 of each year, beginning January 1, 2020, at a rate of 4.00% per annum. The 4.00% notes will mature on July 1, 2024, unless earlier converted, redeemed or repurchased. The 4.00% notes will be convertible, at the option of the holders, into consideration consisting of, at the company's election, cash, shares of the company's common stock, or a combination of cash and shares of the company's common stock until the close of business on the scheduled trading day immediately preceding the maturity date. However, before January 1, 2024, the 4.00% notes will not be convertible unless certain conditions are satisfied. The initial conversion rate is 64.1540 shares of common stock per \$1,000 of principal, which is equal to a conversion price of approximately \$15.59 per share. The conversion rate will be subject to adjustment upon the occurrence of certain events, including but not limited to; the event of a stock dividend or stock split; the issuance of additional rights, options and warrants; spinoffs; the event of a cash dividend or distribution; or a tender or exchange offering. In addition, the company may be obligated to increase the conversion rate for any conversion that occurs in connection with certain corporate events, including the company's calling the 4.00% notes for redemption.

On and after July 1, 2022, and prior to the maturity date, the company may redeem all, but not less than all, of the 4.00% notes for cash if the sale price of the company's common stock equals or exceeds 140% of the applicable conversion price for a specified time period ending on the trading day immediately prior to the date the company delivers notice of the redemption. The redemption price will equal 100% of the principal amount of the 4.00% notes to be redeemed, plus any accrued and unpaid interest to, but excluding, the redemption date. In addition, upon the occurrence of a fundamental change, holders of the 4.00% notes will have the right, at their option, to require the company to repurchase the 4.00% notes in cash at a price equal to 100% of the principal amount of the 4.00% notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

During May 2021, the company entered into a privately negotiated agreement with certain noteholders of the company's 4.00% notes. Under this agreement, 3,568,705 shares of the company's common stock were exchanged for \$51.0 million in aggregate principal amount of the 4.00% notes. Common stock held as treasury shares were exchanged for the 4.00% notes. Pursuant to the guidance within ASC 470, *Debt*, the company recorded a loss of \$9.5 million which was recorded as a charge to interest expense in the consolidated financial statements during the three months ended June 30, 2021, of which \$1.2 million related to unamortized debt issuance costs.

In August 2016, the company issued \$170.0 million of 4.125% convertible senior notes due in 2022, or the 4.125% notes. The 4.125% notes are senior, unsecured obligations of the company, with interest payable on March 1 and September 1 of each year. The company may settle the 4.125% notes in cash, common stock or a combination of cash and common stock. Prior to March 1, 2022, the 4.125% notes are not convertible unless certain conditions are satisfied. The initial conversion rate is 35.7143 shares of common stock per \$1,000 of principal, which is equal to a conversion price of approximately \$28.00 per share. The conversion rate will be subject to adjustment upon the occurrence of certain events, including but not limited to; the event of a stock dividend or stock split; the issuance of additional rights, options and warrants; spinoffs; the event of a cash dividend or distribution; or a tender or exchange offering.

The company may redeem all, but not less than all, of the 4.125% notes at any time on or after September 1, 2020, if the company's common stock equals or exceeds 140% of the applicable conversion price for a specified time period ending on

the trading day immediately prior to the date the company delivers notice of the redemption. The redemption price will equal 100% of the principal plus any accrued and unpaid interest. Holders of the 4.125% notes have the option to require the company to repurchase the 4.125% notes in cash at a price equal to 100% of the principal plus accrued and unpaid interest when there is a fundamental change, such as change in control. If an event of default occurs, it could result in the 4.125% notes being declared due and payable.

In March 2021, concurrent with the issuance of the 2.25% notes, the company used approximately \$156.5 million of the net proceeds of the 2.25% notes to repurchase approximately \$135.7 million aggregate principal amount of the 4.125% notes, in privately negotiated transactions. Pursuant to the guidance within ASC 470, *Debt*, the company recorded a loss upon extinguishment of \$22.1 million. This charge included \$1.2 million of unamortized debt issuance costs related to the principal balance extinguished.

Agribusiness and Energy Services Segment

Green Plains Trade has a \$300.0 million senior secured asset-based revolving credit facility to finance working capital for marketing and distribution activities based on eligible collateral equal to the sum of percentages of eligible receivables and inventories, less miscellaneous adjustments. The credit facility matures on July 28, 2022 and consists of a \$285 million credit facility and a \$15 million first-in-last-out (FILO) credit facility, and includes an accordion feature that enables the credit facility to be increased by up to \$70.0 million with agent approval. Advances are subject to variable interest rates equal to daily LIBOR plus 2.25% on the credit facility and daily LIBOR plus 3.25% on the FILO credit facility. The total unused portion of the revolving credit facility is also subject to a commitment fee of 0.375% per annum.

The terms impose affirmative and negative covenants for Green Plains Trade, including maintaining a minimum fixed charge coverage ratio of 1.15 to 1.00. Capital expenditures are limited to \$1.5 million per year under the credit facility. The credit facility also restricts distributions related to capital stock, with an exception for distributions up to 50% of net income if, on a pro forma basis, (a) availability has been greater than \$10.0 million for the last 30 days and (b) the borrower would be in compliance with the fixed charge coverage ratio on the distribution date.

Green Plains Grain has a \$100.0 million senior secured asset-based revolving credit facility, which matures on June 28, 2022. The credit facility finances working capital up to the maximum commitment based on eligible collateral equal to the sum of percentages of eligible cash, receivables and inventories, less miscellaneous adjustments. Advances are subject to an interest rate equal to LIBOR plus 3.00% or the lenders' base rate plus 2.00%. The credit facility also includes an accordion feature that enables the facility to be increased by up to \$75.0 million with agent approval. The credit facility can also be increased by up to \$50.0 million for seasonal borrowings. Total commitments outstanding cannot exceed \$225.0 million. Depending on utilization, the total unused portion of the \$100.0 million revolving credit facility is also subject to a commitment fee ranging from 0.375% to 0.50%.

Lenders receive a first priority lien on certain cash, inventory, accounts receivable and other assets owned by Green Plains Grain. The terms impose affirmative and negative covenants for Green Plains Grain, including maintaining minimum working capital to be the greater of (i) \$18,000,000 and (ii) 18% of the sum of the then total commitment plus the aggregate seasonal line commitments. Minimum tangible net worth is required to be greater than 21% of the sum of the then total commitment plus the aggregate seasonal line commitments. The credit facility also requires the company to maintain a maximum annual leverage of 6.00 to 1.00. Capital expenditures are limited to \$8.0 million per year under the credit facility, plus equity contributions from the company and unused amounts of up to \$8.0 million from the previous year. In addition, if the company has long-term indebtedness on the date of calculation of greater than \$10.0 million, the credit facility requires the company to maintain a minimum fixed charge coverage ratio of 1.25 to 1.00 and a maximum long term debt capitalization of 40%.

Green Plains Grain has entered into a \$50.0 million short-term inventory financing agreements with a financial institution. The company has accounted for the agreements as short-term notes, rather than sales, and has elected the fair value option to offset fluctuations in market prices of the inventory. The company had no short-term notes payable related to these inventory financing agreements as of June 30, 2021.

Green Plains Commodity Management has an uncommitted \$30.0 million revolving credit facility which matures April 30, 2023 to finance margins related to its hedging programs. Advances are subject to variable interest rates equal to LIBOR plus 1.75%.

Ethanol Production Segment

On February 9, 2021, Green Plains SPE LLC, a wholly-owned special purpose subsidiary and parent of Green Plains Obion and Green Plains Mount Vernon, issued \$125.0 million of junior secured mezzanine notes due 2026 (the “Junior Notes”) with four funds and accounts managed by BlackRock for the purchase of all notes issued.

The Junior Notes will mature on February 9, 2026 and are secured by a pledge of the membership interests in and the real property owned by Green Plains Obion and Green Plains Mount Vernon. The proceeds of the Junior Notes will be used to construct high protein processing systems at the Green Plains Obion and Green Plains Mount Vernon facilities. The Junior Notes accrue interest at an annual rate of 11.75%. However, subject to the satisfaction of certain conditions, the Green Plains SPE LLC may elect to pay an amount in cash equal to interest accruing at a rate of 6.00% per annum plus an amount equal to interest accruing at a rate of 6.75% per annum to be paid in kind. The entire outstanding principal balance, plus any accrued and unpaid interest is due upon maturity. Green Plains SPE LLC is required to comply with certain financial covenants regarding minimum liquidity at Green Plains and a maximum aggregate loan to value. The Junior Notes can be retired or refinanced after 42 months with no prepayment premium. The Junior Notes have an unsecured parent guarantee from the company and have certain limitations on distributions, dividends or loans to the company unless there will not exist any event of default. Funds associated with the Junior Notes are administered by a trustee and are included in the balance of restricted cash as of June 30, 2021.

On September 3, 2020, Green Plains Wood River and Green Plains Shenandoah, wholly-owned subsidiaries of the company, entered into a delayed draw loan agreement with MetLife Real Estate Lending LLC. The \$75.0 million delayed draw loan matures on September 1, 2035 and is secured by substantially all of the assets of the Wood River and Shenandoah facilities. The proceeds from the loan will be used to add high protein processing systems at the Wood River and Shenandoah facilities as well as other capital expenditures.

The delayed draw loan bears interest at a fixed rate of 5.02%, plus an interest rate premium of 1.5% until the loan is fully drawn, which must occur within the 18 month draw period. After the earlier of the 18 month draw period or the loan being fully drawn, the interest rate premium may be adjusted quarterly from 0.00% to 1.50% based on the leverage ratio of total funded debt to EBITDA of Wood River and Shenandoah. Principal payments of \$1.5 million per year begin 24 months from the closing date. Prepayments are prohibited until September 2024. Financial covenants of the delayed draw loan agreement include a minimum loan to value ratio of 50%, a minimum fixed charge coverage ratio of 1.25x commencing on June 30, 2021, a total debt service reserve of six months of future principal and interest payments and a minimum working capital requirement at Green Plains of not less than \$0.10 per gallon of nameplate capacity or \$95.8 million. The loan is guaranteed by the company and has certain limitations on distributions, dividends or loans to Green Plains by Wood River and Shenandoah unless immediately after giving effect to such action, there will not exist any event of default.

The company also has small equipment financing loans, finance leases on equipment or facilities, and other forms of debt financing.

Partnership Segment

Green Plains Partners has a \$135.0 million credit facility to fund working capital, capital expenditures and other general partnership purposes. The credit facility includes a \$130.0 million term loan and a \$5.0 million revolver, and matures on December 31, 2021. The partnership made \$46.8 million in principal payments on the term loan during the six months ended June 30, 2021, including \$16.3 million of scheduled repayments, \$27.5 million related to the sale of the storage assets located adjacent to the Ord, Nebraska ethanol plant and a \$3.0 million prepayment made with excess cash. As of June 30, 2021, no additional prepayments on the term loan were required. Monthly principal payments of \$2.5 million were required through April 15, 2021, with a step up to monthly payments of \$3.2 million beginning May 15, 2021 through maturity. In addition, if at any time subsequent to July 15, 2020, the partnership’s cash balance exceeds \$2.5 million for more than five consecutive business days, prepayments of outstanding principal are required in an amount equal to the excess cash. The partnership is also required to prepay outstanding principal on the credit facility with 100% of net cash proceeds from any asset disposition or recovery event. Any prepayments on the term loan are applied to the remaining principal balance in inverse order of maturity, including the final payment.

The term loan balance, and any advances on the revolver, are subject to a floating interest rate based on a 1.0% LIBOR floor plus 4.50% to 5.25% dependent upon the preceding fiscal quarter’s consolidated leverage ratio. Prepayments of \$40.0 million in excess of the scheduled monthly payments were made prior to April 1, 2021, and as such, the interest rate associated with the term loan balance was not increased to a floating rate based on a 1.00% LIBOR floor plus 5.00% to 5.75%. The unused portion of the revolver is also subject to a commitment fee of 0.50%. The credit facility also allows for

swing line loans subject to the revolver availability. Swing line loans are subject to a floating interest rate based on the Prime Rate plus 3.5% to 4.25% dependent upon the preceding fiscal quarter's consolidated leverage ratio. Under the terms of the credit facility, swing line loans must be repaid within 10 days of the date of the advance. As of June 30, 2021, the term loan had a balance of \$53.2 million and an interest rate of 5.50%, and there were no outstanding swing line loans.

The partnership's obligations under the credit facility are secured by a first priority lien on (i) the equity interests of the partnership's present and future subsidiaries, (ii) all of the partnership's present and future personal property, such as investment property, general intangibles and contract rights, including rights under any agreements with Green Plains Trade, and (iii) all proceeds and products of the equity interests of the partnership's present and future subsidiaries and its personal property and (iv) substantially all of the partnership's real property and material leases of real property. The terms impose affirmative and negative covenants, including restrictions on the partnership's ability to incur additional debt, acquire and sell assets, create liens, invest capital, pay distributions and materially amend the partnership's commercial agreements with Green Plains Trade. The credit facility also requires the partnership to maintain a maximum consolidated leverage ratio and a minimum consolidated debt service coverage ratio, each of which is calculated on a pro forma basis with respect to acquisitions and divestitures occurring during the applicable period. The maximum consolidated leverage ratio required, as of the end of any fiscal quarter, is no more than 3.00x and decreases 0.25x each quarter to 1.50x by December 31, 2021. The minimum consolidated debt service coverage ratio for the three months ended March 31, 2021, was set to 1.05x due to the partnership having completed prepayment of at least \$40 million of the outstanding principal balance on the credit facility as specified in the loan agreement. The minimum debt service coverage ratio resumed being set to 1.10x for subsequent quarters. The consolidated leverage ratio is calculated by dividing total funded indebtedness by the sum of the four preceding fiscal quarters' consolidated EBITDA. The consolidated debt service coverage ratio is calculated by taking the sum of the four preceding fiscal quarters' consolidated EBITDA minus income taxes and consolidated capital expenditures for such period divided by the sum of the four preceding fiscal quarters' consolidated interest charges plus consolidated scheduled funded debt payments for such period.

Under the amended terms of the credit facility, the partnership may make quarterly distribution payments in an aggregate amount not to exceed \$0.12 per outstanding unit, so long as (i) no default has occurred and is continuing, or would result from payment of the distribution, and (ii) the partnership and its subsidiaries are in compliance with its financial covenants and remain in compliance after payment of the distribution. The credit facility is not guaranteed by the company.

Subsequent to June 30, 2021, the partnership amended its credit facility. Please refer to Note 15 – *Subsequent Events* for further details.

Covenant Compliance

The company was in compliance with its debt covenants as of June 30, 2021.

Restricted Net Assets

At June 30, 2021, there were approximately \$169.4 million of net assets at the company's subsidiaries that could not be transferred to the parent company in the form of dividends, loans or advances due to restrictions contained in the credit facilities of these subsidiaries.

9. STOCK-BASED COMPENSATION

The company has an equity incentive plan which reserved a total of 5.7 million shares of common stock for issuance pursuant to the plan. The plan provides for shares, including options to purchase shares of common stock, stock appreciation rights tied to the value of common stock, restricted stock, restricted and deferred stock unit awards and performance share awards to eligible employees, non-employee directors and consultants. The company measures stock-based compensation at fair value on the grant date, with no adjustments for estimated forfeitures. The company records noncash compensation expense related to equity awards in its consolidated financial statements over the requisite period on a straight-line basis.

Restricted Stock Awards and Deferred Stock Units

The non-vested stock award and deferred stock unit activity for the six months ended June 30, 2021, is as follows:

	Non-Vested Shares and Deferred Stock Units	Weighted- Average Grant- Date Fair Value	Weighted-Average Remaining Vesting Term (in years)
Non-Vested at December 31, 2020	1,028,739	\$ 9.15	
Granted	344,689	27.07	
Forfeited	(53,958)	13.82	
Vested	(456,412)	11.45	
Non-Vested at June 30, 2021	863,058	\$ 14.80	2.1

Performance Shares

On February 18, 2021 and March 18, 2020, the board of directors granted performance shares to be awarded in the form of common stock to certain participants of the plan. These performance shares vest based on the level of achievement of certain performance goals, including the incremental value achieved from the company's high-protein initiatives, annual production levels and return on investment (ROI). Performance shares granted in 2021 and 2020 do not contain market based factors requiring a Monte Carlo valuation model. The performance shares were granted at a target of 100%, but each performance share will reduce or increase depending on results for the performance period. If the company achieves the maximum performance goals, the maximum amount of shares available to be issued pursuant to the 2021 and 2020 awards are 1,094,205 performance shares which represents approximately 275% of the 398,102 performance shares which remain outstanding. The actual number of performance shares that will ultimately vest is based on the actual performance targets achieved at the end of the performance period.

On February 19, 2019 and March 19, 2018, the board of directors granted performance shares to be awarded in the form of common stock to certain participants of the plan. These performance shares vest based on the company's average return on net assets (RONA) and the company's total shareholder return (TSR), as further described herein. The performance shares vest on the third anniversary of the grant, if the RONA and TSR criteria are achieved and the participant is then employed by the company. Fifty percent of the performance shares vest based upon the company's ability to achieve a predetermined RONA during the three year performance period. The remaining fifty percent of the performance shares vest based upon the company's total TSR during the three year performance period relative to that of the company's performance peer group.

The performance shares were granted at a target of 100%, but each performance share will reduce or increase depending on results for the performance period for the company's RONA, and the company's TSR relative to that of the performance peer group. On March 19, 2021, based on criteria discussed above, the 2018 performance shares vested at a target of 75%. If the company's RONA and TSR achieve the maximum goals, the maximum amount of shares available to be issued pursuant to the 2019 awards are 242,501 performance shares or 150% of the 161,667 performance shares which remain outstanding. The actual number of performance shares that will ultimately vest is based on the actual percentile ranking of the company's RONA, and the company's TSR compared to the peer performance at the end of the performance period.

For performance shares which include market based factors, the company uses the Monte Carlo valuation model to estimate the fair value of the performance shares on the date of the grant. The weighted average assumptions used by the company in applying the Monte Carlo valuation model for performance share grants and related valuation are illustrated in the following table:

FY 2019 Performance Awards	
Risk-free interest rate	2.45 %
Dividend yield	3.13 %
Expected volatility	41.69 %
Monte Carlo valuation	99.62 %
Closing stock price on the date of grant	\$ 15.34

The non-vested performance share award activity for the six months ended June 30, 2021, is as follows:

	Performance Shares	Weighted- Average Grant- Date Fair Value	Weighted-Average Remaining Vesting Term (in years)
Non-Vested at December 31, 2020	517,969	\$ 10.82	
Granted	183,316	26.41	
Forfeited	(53,601)	20.91	
Vested	(87,915)	17.68	
Non-Vested at June 30, 2021	559,769	\$ 14.29	2.5

Green Plains Partners

Green Plains Partners has a long-term incentive plan (LTIP) intended to promote the interests of the partnership, its general partner and affiliates by providing unit-based incentive compensation awards to employees, consultants and directors to encourage superior performance. The LTIP reserves 2,500,000 common limited partner units for issuance in the form of options, restricted units, phantom units, distribution equivalent rights, substitute awards, unit appreciation rights, unit awards, profit interest units or other unit-based awards. The partnership measures unit-based compensation at fair value on the grant date, with no adjustments for estimated forfeitures. The partnership records noncash compensation expense related to the awards over the requisite service period on a straight-line basis.

The unit-based awards activity for the six months ended June 30, 2021, is as follows:

	Non-Vested Shares and Deferred Stock Units	Weighted- Average Grant- Date Fair Value	Weighted-Average Remaining Vesting Term (in years)
Non-Vested at December 31, 2020	47,620	\$ 6.72	
Vested	(47,620)	6.72	
Non-Vested at June 30, 2021	-	\$ -	0.0

Stock-Based and Unit Based Compensation Expense

Compensation costs for stock-based and unit-based payment plans were \$1.1 million and \$2.0 million for the three and six months ended June 30, 2021, respectively, and \$2.3 million and \$3.6 million for the three and six months ended June 30, 2020, respectively. At June 30, 2021, there was \$14.8 million of unrecognized compensation costs from stock-based and unit-based compensation related to non-vested awards. This compensation is expected to be recognized over a weighted-average period of approximately 2.2 years. The potential tax benefit related to stock-based payment is approximately 23.9% of these expenses.

10. EARNINGS PER SHARE

Basic earnings per share, or EPS, is calculated by dividing net income available to common stockholders by the weighted average number of common shares outstanding during the period.

The company computed diluted EPS by dividing net income on an if-converted basis, adjusted to add back net interest expense related to the convertible debt instruments, by the weighted average number of common shares outstanding during the period, adjusted to include the shares that would be issued if the convertible debt instruments were converted to common shares and the effect of any outstanding dilutive securities.

The basic and diluted EPS are calculated as follows (in thousands, except per share amounts):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Basic EPS:				
Net income (loss) attributable to Green Plains	\$ 9,743	\$ (8,214)	\$ 3,198	\$ (24,659)
Weighted average shares outstanding - basic	45,425	34,603	41,581	34,634
EPS - basic	\$ 0.21	\$ (0.24)	\$ 0.08	\$ (0.71)
Diluted EPS:				
Net income (loss) attributable to Green Plains	\$ 9,743	\$ (8,214)	\$ 3,198	\$ (24,659)
Interest and amortization on convertible debt, net of tax effect:				
4.125% convertible notes due 2022	-	-	-	-
4.00% convertible notes due 2024	577	-	-	-
2.25% convertible notes due 2027	1,216	-	-	-
Net income (loss) attributable to Green Plains - diluted	\$ 11,536	\$ (8,214)	\$ 3,198	\$ (24,659)
Weighted average shares outstanding - basic	45,425	34,603	41,581	34,634
Effect of dilutive convertible debt:				
4.125% convertible notes due 2022	-	-	-	-
4.00% convertible notes due 2024	4,106	-	-	-
2.25% convertible notes due 2027	7,273	-	-	-
Effect of dilutive warrants	669	-	345	-
Effect of dilutive stock-based compensation awards	698	-	749	-
Weighted average shares outstanding - diluted	58,171	34,603	42,675	34,634
EPS - diluted	\$ 0.20	\$ (0.24)	\$ 0.07	\$ (0.71)

Anti-dilutive weighted-average convertible debt and stock-based compensation ⁽¹⁾	1,226	14,074	10,233	13,994
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(1) Anti-dilutive effects related to the company's convertible debt and stock-based compensation awards are excluded from diluted EPS for certain periods presented. For the three months ended June 30, 2021, the company excluded the impact of the 4.125% convertible notes due in 2022, and associated interest and amortization, as inclusion would be anti-dilutive. For the six months ended June 30, 2021, the company excluded the impact of the 4.125% convertible notes due in 2022, 4.00% convertible notes due in 2024 and the 2.25% convertible notes due in 2027, and associated interest and amortization, as inclusion would be anti-dilutive. For the three and six months ended June 30, 2020, all convertible debt and stock-based compensation awards were excluded from diluted EPS as inclusion would be anti-dilutive.

11. STOCKHOLDERS' EQUITY

Early Adoption of ASC 470-20

On January 1, 2021, the company early adopted the amended guidance in ASC 470-20, using the modified retrospective method of transition. The adoption of this guidance resulted in a \$49.5 million decrease in additional paid-in capital, an \$11.4 million increase in retained earnings and a \$38.1 million increase in long-term debt, which included a \$39.4 million increase in debt principal offset by a \$1.3 million increase in debt issuance costs, resulting from amounts previously bifurcated to equity being reclassified to debt.

Upon adoption of amended guidance in ASC 470-20, the company reversed the remaining deferred tax liability of \$9.2 million associated to the equity portion of previously issued convertible debt. As the company had recorded a full valuation allowance against its deferred tax assets, the reversal of the \$9.2 million deferred tax liability would require an increase to the existing valuation allowance by the same amount, which would normally be recorded through current income tax expense. However, because the change in the deferred tax liability is directly linked to the adoption of ASC 470-20, which is accounted for as a cumulative effect adjustment, the required increase to the valuation allowance is recorded as part of the cumulative adjustment to stockholders' equity and has no effect on the income statement.

Public Offering of Common Stock

On March 1, 2021, the company completed an offering of 8,751,500 shares of our common stock, par value \$0.001 per share, in a public offering at a price of \$23.00 per share (the “Common Stock Offering”). The Common Stock Offering resulted in net proceeds of \$191.1 million, after deducting underwriting discounts and commissions as well as the company’s offering expenses.

Warrants

During the three months ended March 31, 2021, in connection with certain arrangements, the company issued warrants to purchase shares of its common stock. The company measures the fair value of the warrants using the Black-Scholes option pricing model as of the issuance date. Exercisable warrants are equity based and recorded as a reduction in additional paid-in capital.

The company has reserved 2,550,000 shares of common stock for the exercise of warrants to non-employees, of which 2,275,000 are exercisable. The remaining 275,000 warrants are contingent upon certain earn-out provisions, treated as liability based awards, and valued quarterly using the company’s stock price. These warrants could potentially dilute basic earnings per share in future periods. The exercise price of the warrants is \$22.00 and expiration dates are December 8, 2025 for 275,000 warrants, February 9, 2026 for 275,000 warrants and April 28, 2026 for 2,000,000 warrants.

Convertible Note Exchange

On May 18, 2021, the company closed on a privately negotiated exchange agreement with certain noteholders of the company’s 4.00% notes, pursuant to which the noteholders agreed to exchange \$51.0 million in aggregate principal for 3,568,705 shares of the company’s common stock at an implied price of \$26.80.

Components of stockholders' equity for the three and six months ended June 30, 2021 and 2020 are as follows (in thousands):

	Common Stock		Additional Paid-in Capital	Retained Earnings	Accum. Other Comp. Income	Treasury Stock		Total Green Plains Stockholders' Equity	Non- Controlling Interests	Total Stockholders' Equity
	Shares	Amount				Shares	Amount			
Balance, December 31, 2020	47,471	\$ 47	740,889	\$ 39,375	(2,172)	11,813	\$ (131,287)	646,852	\$ 129,812	\$ 776,664
Impact of ASC 470-20 adoption ⁽¹⁾	-	-	(49,496)	11,418	-	-	-	(38,078)	-	(38,078)
Balance, January 1, 2021	47,471	47	691,393	50,793	(2,172)	11,813	(131,287)	608,774	129,812	738,586
Net income (loss)	-	-	-	(6,545)	-	-	-	(6,545)	4,566	(1,979)
Cash distributions declared	-	-	-	-	-	-	-	-	(1,395)	(1,395)
Other comprehensive income (loss) before reclassification	-	-	-	-	(4,849)	-	-	(4,849)	-	(4,849)
Amounts reclassified from accumulated other comprehensive income (loss)	-	-	-	-	(1,377)	-	-	(1,377)	-	(1,377)
Other comprehensive income (loss), net of tax	-	-	-	-	(6,226)	-	-	(6,226)	-	(6,226)
Investment in subsidiary	-	-	-	-	-	-	-	-	3,330	3,330
Issuance of warrants	-	-	3,431	-	-	-	-	3,431	(3,431)	-
Issuance of common stock for cash at \$23.00 per share, net of fees	8,752	9	191,125	-	-	-	-	191,134	-	191,134
Stock-based compensation	230	-	(3,000)	-	-	-	-	(3,000)	79	(2,921)
Balance, March 31, 2021	56,453	56	882,949	44,248	(8,398)	11,813	(131,287)	787,568	132,961	920,529
Net income (loss)	-	-	-	9,743	-	-	-	9,743	6,374	16,117
Cash dividends and distributions declared	-	-	-	-	-	-	-	-	(1,395)	(1,395)
Other comprehensive income (loss) before reclassification	-	-	-	-	5,131	-	-	5,131	-	5,131
Amounts reclassified from accumulated other comprehensive income (loss)	-	-	-	-	3,961	-	-	3,961	-	3,961
Other comprehensive income (loss), net of tax	-	-	-	-	9,092	-	-	9,092	-	9,092
Exchange of 4.00% convertible notes due 2024	-	-	17,679	-	-	(3,569)	39,661	57,340	-	57,340
Acquisition of FQT	-	-	-	-	-	-	-	-	1,861	1,861
Warrant liability	-	-	-	-	-	-	-	-	1,278	1,278
Stock-based compensation	(20)	4	324	-	-	-	-	328	80	408
Balance, June 30, 2021	56,433	\$ 60	900,952	\$ 53,991	694	8,244	\$ (91,626)	864,071	\$ 141,159	\$ 1,005,230

(1) See Note 1 – *Recent Accounting Pronouncements* and Note 8 – *Debt* for discussion on adoption of ASC 470-20.

	Common Stock		Additional Paid-in Capital	Retained Earnings	Accum. Other Comp. Income	Treasury Stock		Total Green Plains Stockholders' Equity	Non-Controlling Interests	Total Stockholders' Equity
	Shares	Amount				Shares	Amount			
Balance, January 1, 2020	46,964	\$ 47	\$ 734,580	\$ 148,150	(11,064)	10,932	\$(119,808)	\$ 751,905	\$ 113,381	\$ 865,286
Net income (loss)	-	-	-	(16,445)	-	-	-	(16,445)	6,098	(10,347)
Distributions declared	-	-	-	-	-	-	-	-	(5,498)	(5,498)
Other comprehensive loss before reclassification	-	-	-	-	4,532	-	-	4,532	-	4,532
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	(4,485)	-	-	(4,485)	-	(4,485)
Other comprehensive income, net of tax	-	-	-	-	47	-	-	47	-	47
Share of equity method investees other comprehensive loss arising during the period, net of tax	-	-	-	-	41,956	-	-	41,956	-	41,956
Repurchase of common stock	-	-	-	-	-	881	(11,479)	(11,479)	-	(11,479)
Stock-based compensation	343	-	36	-	-	-	-	36	79	115
Balance, March 31, 2020	47,307	\$ 47	\$ 734,616	\$ 131,705	30,939	11,813	\$(131,287)	\$ 766,020	\$ 114,060	\$ 880,080
Net income (loss)	-	-	-	(8,214)	-	-	-	(8,214)	2,740	(5,474)
Distributions declared	-	-	-	-	-	-	-	-	(1,389)	(1,389)
Other comprehensive loss before reclassification	-	-	-	-	(1,333)	-	-	(1,333)	-	(1,333)
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	(7)	-	-	(7)	-	(7)
Other comprehensive income, net of tax	-	-	-	-	(1,340)	-	-	(1,340)	-	(1,340)
Share of equity method investees other comprehensive loss arising during the period, net of tax	-	-	-	-	(16,759)	-	-	(16,759)	-	(16,759)
Stock-based compensation	160	-	2,072	-	-	-	-	2,072	80	2,152
Balance, June 30, 2020	47,467	\$ 47	\$ 736,688	\$ 123,491	12,840	11,813	\$(131,287)	\$ 741,779	\$ 115,491	\$ 857,270

Amounts reclassified from accumulated other comprehensive income are as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,		Statements of Operations Classification
	2021	2020	2021	2020	
Gains (losses) on cash flow hedges:					
Commodity derivatives	\$ (23,692)	\$ 6	\$ (38,880)	\$ 8,824	(1)
Commodity derivatives	18,485	-	35,484	(2,901)	(2)
Total gains on cash flow hedges	(5,207)	6	(3,396)	5,923	(3)
Income tax benefit (expense)	1,246	1	812	(1,431)	(4)
Amounts reclassified from accumulated other comprehensive income (loss)	\$ (3,961)	\$ 7	\$ (2,584)	\$ 4,492	

- (1) Revenues
- (2) Costs of goods sold
- (3) Income (loss) before income taxes and income from equity method investees
- (4) Income tax benefit

12. INCOME TAXES

The company records actual income tax expense or benefit during interim periods rather than on an annual effective tax rate method. Certain items are given discrete period treatment and the tax effect of those items are reported in full in the relevant interim period. Green Plains Partners is a limited partnership, which is treated as a flow-through entity for federal income tax purposes and is not subject to federal income taxes. As a result, the consolidated financial statements do not reflect income taxes on pre-tax income or loss attributable to the noncontrolling interest in the partnership.

The CARES Act was signed into law on March 27, 2020. The CARES Act includes several significant business tax provisions including elimination of the taxable limit for certain net operating losses ("NOL"), allowing businesses to carry back NOLs arising in 2018, 2019 and 2020 to the five prior tax years, accelerating refunds of previously generated corporate AMT credits, and loosening the business interest limitation under §163(j) from 30% to 50%. The CARES Act also contains

an employee retention credit to encourage employers to maintain headcounts even if employees cannot report to work because of issues related to the COVID-19. In the first quarter of 2020, the company recorded an income tax benefit related to the expected NOL carry back claim of \$28.4 million, which was an estimate based on the amount of NOL rated to the 2019 year-end tax provision. No additional tax benefit was recorded related to the CARES Act during the six months ended June 30, 2021.

The company recorded income tax benefit of \$4.8 million and \$2.9 million for the three and six months ended June 30, 2021, compared with income tax benefit of \$11.5 million and \$55.7 million for the same periods in 2020. The decrease in income tax benefit recorded for the three months ended June 30, 2021 was primarily due to an increase in pretax book income for the period offset by the tax benefit for the utilization of previously recorded NOLs. The decrease in the amount of tax benefit recorded for the six months ended June 30, 2021 compared to the same period in 2020 was primarily due to the tax benefit recognized in 2020 associated with the carry back of the tax NOL generated in 2019 to the 2014 tax year under the newly enacted CARES Act. The amount of unrecognized tax benefits for uncertain tax positions was \$51.4 million as of June 30, 2021 and \$51.6 million as of June 30, 2020.

The effective tax rate can be affected by variances in the estimates and amounts of taxable income among the various states, entities and activity types, realization of tax credits, adjustments from resolution of tax matters under review, valuation allowances and the company's assessment of its liability for uncertain tax positions.

Upon adoption of amended guidance in ASC 470-20, during the first quarter of 2021, the company reversed the remaining deferred tax liability of \$9.2 million associated to the equity portion of previously issued convertible debt. As the company had recorded a full valuation allowance against its deferred tax assets, the reversal of the \$9.2 million deferred tax liability would require an increase to the existing valuation allowance by the same amount which would normally be recorded through current income tax expense. However, as the change in the deferred tax liability is directly linked to the adoption of ASC 470-20, which is accounted for as a cumulative effect adjustment, the required increase to the valuation allowance is recorded as part of the cumulative adjustment to stockholders' equity and has no effect on the consolidated statements of operations.

13. COMMITMENTS AND CONTINGENCIES

Lease Expense

The company leases certain facilities, parcels of land, and equipment, with remaining terms ranging from less than one year to 16.4 years. The land and facility leases include renewal options. The renewal options are included in the lease term only for those sites or locations in which they are reasonably certain to be renewed. Equipment renewals are not considered reasonably certain to be exercised as they typically renew with significantly different underlying terms.

The company may sublease certain of its railcars to third parties on a short-term basis. The subleases are classified as operating leases, with the associated sublease income being recognized on a straight-line basis over the lease term.

The components of lease expense are as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Lease expense				
Operating lease expense	\$ 4,908	\$ 5,255	\$ 9,842	\$ 10,200
Variable lease expense ⁽¹⁾	522	630	591	899
Total lease expense	\$ 5,430	\$ 5,885	\$ 10,433	\$ 11,099

(1) Represents amounts incurred in excess of the minimum payments required for a certain building lease and for the handling and unloading of railcars for a certain land lease, offset by railcar lease abatements provided by the lessor when railcars are out of service during periods of maintenance or upgrade.

Supplemental cash flow information related to operating leases is as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash flows from operating leases	\$ 4,814	\$ 5,019	\$ 9,646	\$ 9,868
Right-of-use assets obtained in exchange for lease obligations:				
Operating leases	4,308	1,204	10,772	6,879
Right-of-use assets and lease obligations derecognized due to lease modifications:				
Operating leases	-	-	51	-

Supplemental balance sheet information related to operating leases is as follows:

	June 30, 2021	December 31, 2020
Weighted average remaining lease term	5.8 years	6.2 years
Weighted average discount rate	4.27%	4.55%

Aggregate minimum lease payments under the operating lease agreements for the remainder of 2021 and in future years are as follows (in thousands):

Year Ending December 31,	Amount
2021	\$ 10,257
2022	18,883
2023	15,240
2024	12,585
2025	8,286
Thereafter	15,672
Total	80,923
Less: Present value discount	(12,394)
Lease liabilities	\$ 68,529

The company has additional railcar operating leases that will commence in the third quarter of 2021, with estimated future minimum lease commitments of approximately \$4.0 million and lease terms of three to five years. The undiscounted amounts are not included in the tables above.

Lease Revenue

As described in Note 2 – Revenue, the majority of the partnership’s segment revenue is generated through their storage and throughput services and rail transportation services agreements with Green Plains Trade and are accounted for as lease revenue. Leasing revenues do not represent revenues recognized from contracts with customers under ASC 606, and are accounted for under ASC 842, Leases. Lease revenue associated with agreements with Green Plains Trade is eliminated upon consolidation. The remaining lease revenue is not material to the company. Refer to Note 2 – Revenue for further discussion on lease revenue.

Commodities

As of June 30, 2021, the company had contracted future purchases of grain, corn oil, natural gas, ethanol and distillers grains, valued at approximately \$379.4 million.

Legal

The company is currently involved in litigation that has arisen during the ordinary course of business, but does not believe any pending litigation will have a material adverse effect on its financial position, results of operations or cash flows.

14. RELATED PARTY TRANSACTIONS

Aircraft Leases

The company entered into two agreements with an entity controlled by Wayne Hoovestol for the lease of two aircraft. Mr. Hoovestol is chairman of the company's board of directors. Given the limited amount of travel during fiscal year 2020, the companies have agreed to defer the monthly payment until excess carryover hours are used. As of June 30, 2021, the company has approximately 44 hours of flight time available to be used. Once used, the company agreed to pay \$11,588 per month for the combined use of up to 125 hours per year for the aircraft. Flight time in excess of 125 hours per year will incur additional hourly charges. Payments related to these leases totaled \$14 thousand and \$35 thousand during the three and six months ended June 30, 2021 and \$0 and \$24 thousand during the three and six months ended June 30, 2020, respectively. The company had no outstanding payables related to these agreements as of June 30, 2021 and December 31, 2020.

Green Plains Cattle Company LLC

The company engaged in certain related party transactions with GPCC, which was considered a related party until the fourth quarter of 2020 at which time the company's remaining 50% interest was sold. The company provided a variety of shared services to GPCC, including accounting and finance, payroll and human resources, information technology, legal, communications and treasury activities. The company reduced selling, general and administrative expenses by \$0.4 million and \$0.8 million related to shared services provided for the three and six months ended June 30, 2020.

Green Plains Trade Group, a subsidiary of the company, enters into certain sale contracts with GPCC during the normal course of business. Revenues were \$3.1 million and \$6.0 million for the three and six months ended June 30, 2020.

Mr. Ejnar Knudsen, a member of the company's board of directors, has an indirect ownership interest in GPCC of 0.0736% by reason of his ownership in TGAM Agribusiness Fund LP. Based on the purchase price, the value of that ownership interest is approximately \$0.1 million. Mr. Knudsen also is the CEO and partial owner of AGR Partners LLC, which provides investment advisory services to TGAM Agribusiness Fund LP pursuant to a sub-advisory agreement between AGR Partners LLC and Nuveen Alternative Advisors LLC, which is the investment manager for TGAM Agribusiness Fund LP and receives usual and customary advisory fees.

15. SUBSEQUENT EVENTS

On July 20, 2021, the partnership entered into an Amended and Restated Credit Agreement ("Amended Credit Facility") to its existing credit facility with funds and account managed by BlackRock ("BlackRock") and TMI Trust Company as administrative agent.

Under the terms of the agreement, BlackRock purchased the outstanding balance of the existing notes from Bank of America N.A., as previous administrative agent, and certain other commercial lending institutions. The Amended Credit Facility will mature on July 20, 2026 and the principal amount available is \$60.0 million. As a result of the new maturity date, \$50.0 million has been reclassified from current maturities of long-term debt to long-term debt as of June 30, 2021. Interest on the Amended Credit Facility is based on 3-month LIBOR plus 8.00%, with a 0% LIBOR floor. Interest is payable on the 15th day of each March, June, September and December during the term with the first interest payment being September 15, 2021. The Amended Credit Facility does not require any principal payments; however, the partnership has the option to prepay \$1.5 million per quarter beginning twelve months following closing. Financial covenants of the agreement will include a maximum consolidated leverage ratio of 2.5x and a minimum consolidated debt service coverage ratio of 1.1x. The Amended Credit Facility continues to be secured by substantially all of the assets of the partnership. The Amended Credit Facility removes the prior quarterly distribution restriction of \$0.12 per outstanding unit and allows for the distribution of all distributable cash flow and cash on hand subject to covenant compliance.

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations.

General

The following discussion and analysis provides information we believe is relevant to understand our consolidated financial condition and results of operations. This discussion should be read in conjunction with the consolidated financial statements and notes to the consolidated financial statements contained in this report together with our annual report on Form 10-K for the year ended December 31, 2020.

Cautionary Information Regarding Forward-Looking Statements

Forward-looking statements are made in accordance with safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These statements are based on current expectations that involve a number of risks and uncertainties and do not relate strictly to historical or current facts, but rather to plans and objectives for future operations. These statements may be identified by words such as “anticipate,” “believe,” “continue,” “estimate,” “expect,” “intend,” “outlook,” “plan,” “predict,” “may,” “could,” “should,” “will” and similar expressions, as well as statements regarding future operating or financial performance or guidance, business strategy, environment, key trends and benefits of actual or planned acquisitions.

Factors that could cause actual results to differ from those expressed or implied in the forward-looking statements include, but are not limited to, those discussed in Part I, Item 1A – Risk Factors of our annual report on Form 10-K for the year ended December 31, 2020, Part II, Item 1A – Risk Factors in this report, or incorporated by reference. Specifically, we may experience fluctuations in future operating results due to a number of economic conditions, including: disruption caused by health epidemics, such as the COVID-19 outbreak; competition in the ethanol industry and other industries in which we operate; commodity market risks, including those that may result from weather conditions; financial market risks; counterparty risks; risks associated with changes to government policy or regulation, including changes to tax laws; risks related to acquisition and disposition activities and achieving anticipated results; risks associated with merchant trading; risks related to our equity method investees and other factors detailed in reports filed with the SEC. Additional risks related to Green Plains Partners LP include compliance with commercial contractual obligations, potential tax consequences related to our investment in the partnership and risks disclosed in the partnership’s SEC filings associated with the operation of the partnership as a separate, publicly traded entity.

We believe our expectations regarding future events are based on reasonable assumptions; however, these assumptions may not be accurate or account for all risks and uncertainties. Consequently, forward-looking statements are not guaranteed. Actual results may vary materially from those expressed or implied in our forward-looking statements. In addition, we are not obligated and do not intend to update our forward-looking statements as a result of new information unless it is required by applicable securities laws. We caution investors not to place undue reliance on forward-looking statements, which represent management’s views as of the date of this report or documents incorporated by reference.

Overview

Green Plains is an Iowa corporation, founded in June 2004 as a producer of low carbon fuels and has grown to be one of the leading corn processors in the world. We continue the transition from a commodity-processing business to a value-add agricultural technology company focusing on creating diverse, non-cyclical, higher margin products. In addition, we are currently undergoing a number of project initiatives to improve margins. Through our Project 24 initiative, we anticipate reductions in operating expense per gallon across our non-ICM plants and with our high-protein initiative, we expect to produce various Ultra-High Protein feed ingredients and greater amounts of corn oil further increasing margins per gallon.

Our first Ultra-High Protein installation was completed at our Shenandoah plant during the first quarter of 2020 with shipments of dried product beginning in April 2020. Installation at our Wood River plant began during the third quarter 2020 with shipments expected to begin in October 2021. Installation at our Central City plant began during the second quarter 2021 with shipments expected to begin in the second quarter of 2022. We anticipate that additional locations will be completed over the course of the next several years beginning with the Mount Vernon and Obion locations. Through our Ultra-High Protein initiative we expect to produce feed ingredients with protein concentration of 50% or greater, increase production of corn oil as well produce other higher value products, such as post-MSC distillers grains. During the second quarter of 2021, we announced Fagen, Inc. as the general contractor to construct and install Ultra-High Protein systems across our biorefining platform.

We have upgraded our York facility to include USP grade alcohol capabilities and continue to review the timing of upgrading to GNS grade alcohol at York and USP grade alcohol at Wood River by adding additional distillation and

processing capabilities to serve other high-value markets. The CST production facility at the Innovation Center at York came online in the second quarter of 2021, which now allows for the production of industrial grade dextrose with the addition of food grade production near-term. We are working with a number of prospective customers on product validation and anticipate modifying one or more biorefineries with CST production capabilities to meet anticipated future demand.

In December 2020, we completed the purchase of a majority interest in Fluid Quip Technologies, LLC. The acquisition capitalizes on the core strengths of each company to develop and implement proven, value-added agriculture, food and industrial biotechnology systems and rapidly expand installation and production of Ultra-High Protein across Green Plains facilities, as well as offer these technologies to partnering biofuel facilities. Through developmental efforts with Fluid Quip and other innovation partners, the company continues to develop capabilities to produce higher protein concentration and purity levels on a full commercial scale.

In February 2021, we announced a carbon sequestration partnership with Summit Carbon Solutions. Eight of our biorefineries have entered into long term carbon offtake agreements, which will lower greenhouse gas emissions at each of the biorefineries through the capturing and storing of carbon dioxide, significantly lowering their carbon footprint. The project is anticipated to begin operation in late 2024.

Additionally, we have taken advantage of opportunities to divest certain assets in recent years. We are focused on generating stable operating margins through our business segments and risk management strategy. We own and operate assets throughout the ethanol value chain: upstream, with grain handling and storage; through our ethanol production facilities; and downstream, with marketing and distribution services to mitigate commodity price volatility. Our other businesses leverage our supply chain, production platform and expertise.

Our profitability is highly dependent on commodity prices, particularly for ethanol, distillers grains, corn oil, corn, and natural gas. Since market price fluctuations of these commodities are not always correlated, our operations may be unprofitable at times. We use a variety of risk management tools and hedging strategies to monitor price risk exposure at our ethanol plants and lock in favorable margins or reduce production when margins are compressed.

Green Plains Partners LP is our primary downstream logistics provider, storing and delivering the ethanol we produce. We own a 48.9% limited partner interest, a 2.0% general partner interest and all of the partnership's incentive distribution rights. The public owns the remaining 49.1% limited partner interest. The partnership is consolidated in our financial statements.

Recent Developments

Amendment to Partnership Credit Agreement

On July 20, 2021, the partnership entered into an Amended and Restated Credit Agreement to its existing credit facility with funds and account managed by BlackRock and TMI Trust Company as administrative agent.

Under the terms of the agreement, BlackRock purchased the outstanding balance of the existing notes from Bank of America N.A., as previous administrative agent, and certain other commercial lending institutions. The Amended Credit Facility will mature on July 20, 2026 and the principal amount available is \$60.0 million. Interest on the Amended Credit Facility is based on 3-month LIBOR plus 8.00%, with a 0% LIBOR floor. Interest is payable on the 15th day of each March, June, September and December during the term with the first interest payment being September 15, 2021. The Amended Credit Facility does not require any principal payments however the partnership has the option to prepay \$1.5 million per quarter beginning twelve months following closing. Financial covenants include a maximum consolidated leverage ratio of 2.5x and a minimum consolidated debt service coverage ratio of 1.1x. The Amended Credit Facility continues to be secured by substantially all of the assets of the partnership.

Concurrent with the closing of the Amended Credit Facility, the board of directors of the partnership announced its intention to return to its prior strategy of maintaining a 1.10x coverage ratio on normalized trailing 12-month distributable cash flow. As the Amended Credit Facility does not have a revolving line of credit, it believes the distribution strategy provides adequate liquidity to cover the partnership's working capital needs.

4.00% Note Exchange

On May 18, 2021, we entered into a privately negotiated agreement with certain noteholders of our 4.00% notes. Under this agreement, 3,568,705 shares of our common stock were exchanged for \$51.0 million in aggregate principal amount of the 4.00% notes. Pursuant to the guidance within ASC 470, *Debt*, we recorded a loss of \$9.5 million which was recorded as a charge to interest expense in the consolidated financial statements during the three months ended June 30, 2021, of which \$1.2 million related to unamortized debt issuance costs.

Results of Operations

During the second quarter of 2021, we experienced a stronger ethanol margin environment. We maintained an average utilization rate of approximately 79.9% of capacity, resulting in ethanol production of 190.9 mmg for the second quarter of 2021, compared with 149.9 mmg, or 53.5% of capacity, for the same quarter last year. The increase in the average utilization rate was primarily due to capacity offline in the prior year due to poor margins driven in part by a significant reduction in motor fuel demand as a result of the COVID-19 pandemic. Our operating strategy is to reduce operating expenses, energy usage and water consumption through our Project 24 initiative while running at higher utilization rates in order to achieve improved margins. However, in the current environment, we may continue to exercise operational discretion that results in reductions in production. Additionally, we may experience lower run rates due to the construction of various projects. It is possible that production could be below minimum volume commitments in the future, depending on various factors that drive each biorefineries variable contribution margin, including future driving and gasoline demand for the industry.

U.S. Ethanol Supply and Demand

According to the EIA, domestic ethanol production averaged 1.0 million barrels per day during the second quarter of 2021, which was 42% higher than the 0.71 million barrels per day for the same quarter last year. Refiner and blender input volume increased 35% to 903 thousand barrels per day for the second quarter of 2021, compared with 669 thousand barrels per day for the same quarter last year. Gasoline demand increased 2.1 million barrels per day, or 31% during the second quarter of 2021 compared to the prior year. U.S. domestic ethanol ending stocks increased by approximately 1.4 million barrels compared to the prior year, or 7%, to 21.6 million barrels during the second quarter of 2021. As of June 30, 2021, according to Prime the Pump, there were approximately 2,460 retail stations selling E15 in 30 states, up from 2,300 at the beginning of the year, and approximately 245 pipeline terminal locations now offering E15 to wholesale customers.

Global Ethanol Supply and Demand

According to the USDA Foreign Agriculture Service, domestic ethanol exports through May 31, 2021 were approximately 582 mmg, down 10.7% from 652 mmg for the same period of 2020. Canada was the largest export destination for U.S. ethanol accounting for 22% of domestic ethanol export volume. India, China, South Korea, and Brazil accounted for 18%, 17%, 12% and 5%, respectively, of U.S. ethanol exports. We currently estimate that net ethanol exports will range from 1.2 to 1.4 billion gallons in 2021, based on historical demand from a variety of countries and certain countries who seek to improve their air quality and eliminate MTBE from their own fuel supplies.

In January 2020, China and the United States struck a “Phase I” trade agreement, which included commitments on agricultural commodity purchases. Ethanol, corn and distillers grains were included as potential purchases in the agreement. China has been purchasing large quantities of corn, which has raised domestic prices of this feedstock for our ethanol production process. In addition, in October 2020 it was announced that China had purchased a shipment of U.S. ethanol for the first time since March 2018. Total ethanol exports to China in 2020 were 21.3 million gallons, and through May 2021 were 100.1 million gallons, according to the USDA Foreign Agriculture Service.

Year-to-date U.S. distillers grains exports through May 31, 2021, were 4.5 million metric tons, or 9.5% higher than the same period last year, according to the USDA Foreign Agriculture Service. Mexico, Vietnam, South Korea, Indonesia, Turkey and Japan accounted for approximately 62.2% of total U.S. distillers export volumes.

Legislation and Regulation

We are sensitive to government programs and policies that affect the supply and demand for ethanol and other fuels, which in turn may impact the volume of ethanol and other fuels we handle. Over the past few years, various bills and amendments have been proposed in the House and Senate, which would eliminate the RFS II entirely, eliminate the corn based ethanol portion of the mandate, and make it more difficult to sell fuel blends with higher levels of ethanol. We believe it is unlikely that any of these bills will become law in the current Congress. In addition, the manner in which the EPA

administers the RFS II and related regulations can have a significant impact on the actual amount of ethanol blended into the domestic fuel supply.

Federal mandates and state-level clean fuel programs supporting the use of renewable fuels are a significant driver of ethanol demand in the U.S. Ethanol policies are influenced by concerns for the environment, diversifying our fuel supply, and reducing the country's dependence on foreign oil. Consumer acceptance of flex-fuel vehicles and higher ethanol blends of ethanol in non-flex-fuel vehicles may be necessary before ethanol can achieve further growth in U.S. market share. In addition, expansion of clean fuel programs in other states, or a national low carbon fuel standard could increase the demand for ethanol, depending on how it is structured.

Congress first enacted CAFE standards in 1975 to reduce energy consumption by increasing the fuel economy of cars and light trucks. Flexible-fuel vehicles (FFVs), which are designed to run on a mixture of fuels, including higher blends of ethanol such as E85, used to receive preferential treatment in the form of CAFE credits. There are approximately 21 million FFVs on the road in the U.S. today, 16 million of which are light duty trucks. FFV credits have been decreasing since 2014 and were completely phased out in 2020. Absent CAFE preferences, auto manufacturers may not be willing to build flexible-fuel vehicles, which has the potential to slow the growth of E85 markets. However, California's Low Carbon Fuel Standard program (LCFS) has driven growth in E85 usage, and other state/regional LCFS programs have the potential to do the same.

The RFS II sets a floor for biofuels use in the United States. When the RFS II was established in 2010, the required volume of "conventional" or corn-based ethanol to be blended with gasoline was to increase each year until it reached 15.0 billion gallons in 2015, which left the EPA to address existing limitations in both supply and demand. The EPA has not yet released a draft RVO rule for the 2021 or 2022 volumes, even though they typically release a draft mid-year and finalize the rule by November 30 of the preceding year. As of this filing, the EPA has not released the RVO for 2021 and 2022, although they are expected to propose a joint rule in August or September of 2021 and finalize by the end of the calendar year.

According to the RFS II, if mandatory renewable fuel volumes are reduced by at least 20% for two consecutive years, the EPA is required to modify, or reset, statutory volumes through 2022 – the year through which the statutorily prescribed volumes run. While conventional ethanol maintained 15 billion gallons, 2019 was the second consecutive year that the total RVO was more than 20% below the statutory volumes levels. Thus, the EPA was expected to initiate a reset rulemaking, and modify statutory volumes through 2022, and do so based on the same factors they are to use in setting the RVOs post-2022. These factors include environmental impact, domestic energy security, expected production, infrastructure impact, consumer costs, job creation, price of agricultural commodities, food prices, and rural economic development. However, in late 2019, the EPA announced it would not be moving forward with a reset rulemaking in 2020. It is unclear when or if the current EPA will propose a reset rulemaking, though they have stated an intention to propose a post-2022 set rulemaking by the end of 2021.

Under the RFS, RINs and SREs are important tools impacting supply and demand. The EPA assigns individual refiners, blenders, and importers the volume of renewable fuels they are obligated to use in each annual RVO based on their percentage of total domestic transportation fuel sales. Obligated parties use RINs to show compliance with the RFS II mandated volumes. Ethanol producers assign RINs to renewable fuels and the RINs are detached when the renewable fuel is blended with transportation fuel domestically. Market participants can trade the detached RINs in the open market. The market price of detached RINs affects the price of ethanol in certain markets and can influence purchasing decisions by obligated parties. As it relates to SREs, a small refinery is defined as one that processes fewer than 75,000 barrels of petroleum per day. Small refineries can petition the EPA for a SRE which, if approved, waives their portion of the annual RVO requirements. The EPA, through consultation with the DOE and the USDA, can grant them a full or partial waiver, or deny it outright within 90 days of submittal. The EPA granted significantly more of these waivers for 2016, 2017 and 2018 than they had in the past, totaling 790 mmg of waived requirements for the 2016 compliance year, 1.82 billion gallons for 2017 and 1.43 billion gallons for 2018. In doing so, the EPA effectively reduced the RFS II mandated volumes for those compliance years by those amounts respectively, and as a result, RIN values declined significantly. In the waning days of the Trump administration, the EPA approved three additional SREs, reversing one denial from 2018 and granting two from 2019. A total of 88 SREs were granted under the Trump Administration, totaling 4.3 billion gallons of potential blending demand erased. The EPA, under the current administration, reversed the three SREs issued in the final weeks of the previous administration.

The One-Pound Waiver that was extended in May 2019 to allow E15 to be sold year-round to all vehicles model year 2001 and newer was challenged in an action filed in Federal District Court for the D.C. Circuit. On July 2, 2021, the Circuit Court vacated the EPA's rule so the future of summertime sales of E15 to non-FFVs is uncertain. However, as of this filing, the One-Pound Waiver remains in effect, and E15 is sold year-round in approximately 30 states. In January 2021, the EPA announced it intended to begin a rulemaking regarding E15 labels and underground storage tank compatibility.

Biofuels groups have filed a lawsuit in the Court of Appeals for the D.C. Circuit, challenging the 2019 RVO rule over the EPA's failure to address small refinery exemptions in the rulemaking. This was the first RFS II rulemaking since the expanded use of the exemptions came to light; however, the EPA had declined to cap the number of waivers it grants, and until late 2019, had declined to alter how it accounts for the retroactive waivers in its annual volume calculations. The EPA has a statutory mandate to ensure the volume requirements are met, which is achieved by setting the percentage standards for obligated parties. The EPA's recent approach accomplished the opposite. Even if all the obligated parties complied with their respective percentage obligations for 2019, the nation's overall supply of renewable fuel would not meet the total volume requirements set by the EPA. This undermines Congressional intent to increase the consumption of renewable fuels in the domestic transportation fuel supply. Biofuels groups have argued the EPA must therefore adjust its percentage standard calculations to make up for past retroactive waivers and adjust the standards to account for any waivers it reasonably expects to grant in the future.

In 2017, while citing inadequate domestic supply, the D.C. Circuit ruled in favor of biofuel groups against the EPA related to its decision to lower the 2016 volume requirements by 500 mmg. As a result, the Court remanded to the EPA to make up for the 500 mmg. Despite this, in the proposed 2020 RVO rulemaking released in July 2019, the EPA stated it does not intend to make up the 500 mmg as the court directed, citing potential burden on obligated parties. The EPA had, at one point, indicated that it planned to address this court ordered remand in conjunction with the 2021 RVO rulemaking; however that rulemaking has been delayed indefinitely, and whether these gallons will be accounted for is unclear.

In 2019, in a supplemental rulemaking to the 2020 RVO rule, the EPA changed their approach, and for the first time accounted for the gallons that they anticipate will be waived from the blending requirements due to small refinery exemptions. To accomplish this, they added in the trailing three year average of gallons the DOE recommended be waived, in effect raising the blending volumes across the board in anticipation of waiving the obligations in whole or in part for certain refineries that qualify for the exemptions. Though the EPA has often disregarded the recommendations of the DOE in years past, they stated in the rule their intent to adhere to these recommendations going forward, including granting partial waivers rather than an all or nothing approach.

In January 2020, the U.S. Court of Appeals for the 10th Circuit ruled on RFA et. al. vs. EPA in favor of biofuels interests, overturning EPA's granting of refinery exemptions to three refineries on two separate grounds. The Court agreed that, under the Clean Air Act, refineries are eligible for SREs for a given RVO year only if such exemptions are extensions of exemptions granted in previous RVO years. In this case, the three refineries at issue did not qualify for SREs in the year prior to the year that EPA granted them. They were thus ineligible for additional SRE relief because there were no immediately prior SREs to extend. In addition, the Court agreed that the disproportionate economic hardship prong of SRE eligibility should be determined solely by reference to whether compliance with the RFS II creates such hardship, not whether compliance plus other issues create disproportionate economic hardship. The Court thus vacated EPA's grant of SREs for certain years and remanded the grants back to EPA. The refiners appealed for a rehearing which was denied. Two of the refiners appealed the decision to the U.S. Supreme Court and in January 2021, the Supreme Court announced they would hear the case, and oral arguments were held in late April 2021. In February 2021, the EPA indicated that it intends to adhere to the 10th Circuit ruling. On June 25, 2021, the Supreme Court ruled that the 10th Circuit's interpretation of "extension" was too narrow, and vacated that portion of the ruling. As of this filing, it is unclear how this Supreme Court decision may impact the EPA's handling of SREs.

In light of the 10th Circuit ruling, a number of refineries applied for "gap year" SREs in an effort to establish a continuous string of relief and to ensure they are able to qualify for SREs going forward. A total of 64 gap year requests were filed with the EPA and reviewed by the DOE. In September 2020, the EPA announced that they were denying 54 of the gap year requests that had been scored and returned by DOE, regardless of how they had been scored.

In October 2019, the White House directed the USDA and EPA to move forward with rulemaking to expand access to higher blends of biofuels. This includes funding for infrastructure, labeling changes and allowing E15 to be sold through E10 infrastructure. The USDA rolled out the Higher Blend Infrastructure Incentive Program in the summer of 2020, providing competitive grants to fuel terminals and retailers for installing equipment for dispensing higher blends of ethanol and biodiesel. In 2020, five Governors and 15 Republican Senators sent letters to the EPA requesting a general waiver from the RFS due to the drop in demand caused by COVID-19 travel restrictions. Since then there have been additional petitions for waivers from the RFS requirements. As of this filing the EPA had indicated only that they are watching the situation closely and reviewing the various requests.

To respond to the COVID-19 health crisis and attempt to offset the subsequent economic damage, Congress passed multiple relief measures, most notably the CARES Act in March 2020, which created and funded multiple programs that

have impacted our industry. The USDA was given additional resources for the Commodity Credit Corporation (CCC) and they are using those funds to provide direct payments to farmers, including corn farmers from whom we purchase most of our feedstock for ethanol production. Similar to the trade aid payments made by the USDA over the past two years, this cash injection for farmers could cause them to delay marketing decisions and increase the price we have to pay to purchase corn. The CARES Act also allowed for certain net operating loss carrybacks, which has allowed us to receive certain tax refunds. In December 2020, Congress passed and the President signed into law an annual spending package coupled with another COVID relief bill which included additional funds for the Secretary of Agriculture to distribute to those impacted by the pandemic. The language of the bill specifically includes biofuels producers as eligible for some of this aid, and in March of 2021, the USDA indicated that biofuels would be able to apply for a portion of these funds in a forthcoming rulemaking. On June 15, 2021, the USDA indicated that \$700 million would be made available to biofuels producers, and that details for the program would be released within 60 days.

The CARES Act provided a tax exclusion on the shipment of undenatured ethanol for use in manufacturing hand sanitizer, a key ingredient of which is undenatured ethanol of specific grades. The FDA has also provided expanded guidance to allow for more denaturants to be used in ethanol intended for hand sanitizer production, and has expanded the grades of ethanol allowed for the duration of the public health crisis.

The current administration has indicated a desire to dramatically expand electric vehicle (EV) charging stations, and initially proposed \$174 billion for EV charging infrastructure, purchase rebates, and other incentives. The bipartisan infrastructure package being considered by Congress includes \$15 billion for EV charging infrastructure, and \$5 billion for electric busses and ferries. Additionally, Congress is considering expanded EV incentives in a potential partisan budget reconciliation package, with the goal of installing 500,000 EV charging stations and providing incentives to middle and lower income Americans to purchase EVs.

Government actions abroad can significantly impact the demand for U.S. ethanol. In September 2017, China's National Development and Reform Commission, the National Energy Agency and 15 other state departments issued a joint plan to expand the use and production of biofuels containing up to 10% ethanol by 2020. China, the number three importer of U.S. ethanol in 2016, imported negligible volumes during 2018 and 2019 due to a 30% tariff on U.S. ethanol, which increased to 70% in early 2018. There is no assurance that China's joint plan to expand blending to 10% will be carried to fruition, nor that it will lead to increased imports of U.S. ethanol in the near term. Ethanol is included as an agricultural commodity under the "Phase I" agreement with China, wherein they are to purchase upwards of \$40 billion in agricultural commodities from the U.S. in both 2020 and 2021.

In Brazil, the Secretary of Foreign Trade had issued a tariff rate quota which expired in December of 2020. All U.S. ethanol gallons now face a 20% tariff into Brazil. Exports to Brazil were 200 mmg in 2020. Our exports also face tariffs, rate quotas, countervailing duties, and other hurdles in the European Union, India, Peru, Colombia and elsewhere, which limits the ability to compete in some markets. We believe some countries are using the COVID-19 crisis as justification for raising duties on imports of U.S. ethanol, or blocking our imports entirely.

In June 2017, the Energy Regulatory Commission of Mexico (CRE) approved the use of 10% ethanol blends, which was challenged by multiple lawsuits, of which several were dismissed. The remaining four cases follow one of two tracks: 1) to determine the constitutionality of the CRE regulation, or 2) to determine the benefits, or lack thereof, of introducing E10 to Mexico. An injunction was granted in October 2017, preventing the blending and selling of E10, but was overturned by a higher court in June 2018 making it legal to blend and sell E10 by PEMEX throughout Mexico except for its three largest metropolitan areas. On January 15, 2020, the Mexican Supreme Court ruled that the expedited process for the CRE regulation was unconstitutional, and that after a 180 day period the maximum ethanol blend allowed in the country would revert to 5.8%. There was an effort to go through the full regulatory process to allow for 10% blends countrywide, including in the three major metropolitan areas. The 180 day window was extended multiple times due to COVID-19, but eventually lapsed in June 2021, decreasing the maximum ethanol blend back to 5.8%.

In January 2020, the updated North American Free Trade Agreement, known as the United States Mexico Canada Agreement or USMCA was signed. The USMCA went into effect on July 1, 2020, and maintains the duty free access of U.S. agricultural commodities, including ethanol, into Canada and Mexico. According to the Department of Commerce, exports to Canada were 326 mmg and exports to Mexico were 64 mmg in 2020.

Impact of COVID-19 and Decline in Oil Demand

The COVID-19 pandemic and related economic repercussions have created significant volatility, uncertainty, and turmoil in the energy industry. The situation surrounding COVID-19 continues to evolve rapidly and the ultimate duration and impact of the outbreak as well as the continued decline in oil demand remains highly uncertain and subject to change.

We continue to closely monitor the impact of COVID-19 on all aspects of our business, including how it will impact our employees, customers, vendors, and business partners. For the six months ended June 30, 2021, there has been no adverse effect due to COVID-19 on our ability to maintain operations, including our financial reporting systems, our internal controls over financial reporting or our disclosure controls and procedures. Although we did not incur significant disruptions during the three and six months ended June 30, 2021 from COVID-19, we are unable to predict the impact that COVID-19 will have on our future financial position and operating results due to numerous uncertainties.

For further information regarding the impact of COVID-19 and the decline in oil demand on the company, please see Part I, Item 1A, "Risk Factors," of our 2020 annual report.

Comparability of our Financial Results

There are various events that affect comparability of our operating results from 2021 to 2020, including the sale of our 50% interest of GPCC in October 2020, the sale of our Hereford, Texas plant in December 2020, the acquisition of a majority interest in FQT in December 2020 and the disposition of our Ord, Nebraska plant in March 2021.

We report the financial and operating performance for the following four operating segments: (1) ethanol production, which includes the production of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil, (2) agribusiness and energy services, which includes grain handling and storage, commodity marketing and merchant trading for company-produced and third-party ethanol, distillers grains, corn oil, natural gas and other commodities, (3) food and ingredients, which includes food-grade corn oil and (4) partnership, which includes fuel storage and transportation services. The food and ingredients segment had no activity during the three and six months ended June 30, 2021 and 2020.

During the normal course of business, our operating segments do business with each other. For example, our agribusiness and energy services segment procures grain and natural gas and sells products, including ethanol, distillers grains and corn oil of our ethanol production segment. Our partnership segment provides fuel storage and transportation services for our agribusiness and energy services segment. These intersegment activities are treated like third-party transactions with origination, marketing and storage fees charged at estimated market values. Consequently, these transactions affect segment performance; however, they do not impact our consolidated results since the revenues and corresponding costs are eliminated.

Corporate activities include selling, general and administrative expenses, consisting primarily of compensation, professional fees and overhead costs not directly related to a specific operating segment. When we evaluate segment performance, we review the following segment information as well as earnings before interest, income taxes, depreciation and amortization, excluding amortization of operating lease right-of-use assets and amortization of debt issuance costs, or EBITDA.

As of June 30, 2021, we, together with our subsidiaries, own a 48.9% limited partner interest and a 2.0% general partner interest in the partnership and own all of the partnership's incentive distribution rights, with the remaining 49.1% limited partner interest owned by public common unitholders. We consolidate the financial results of the partnership, and record a noncontrolling interest for the economic interest in the partnership held by the public common unitholders.

Segment Results

The selected operating segment financial information are as follows (in thousands):

	Three Months Ended June 30,		% Variance	Six Months Ended June 30,		% Variance
	2021	2020		2021	2020	
Revenues:						
Ethanol production:						
Revenues from external customers	\$ 555,273	\$ 290,517	91.1%	\$ 978,995	\$ 766,217	27.8%
Intersegment revenues	-	25	*	-	50	*
Total segment revenues	<u>555,273</u>	<u>290,542</u>	91.1	<u>978,995</u>	<u>766,267</u>	27.8
Agribusiness and energy services:						
Revenues from external customers	167,975	96,123	74.8	296,796	252,004	17.8
Intersegment revenues	5,512	4,368	26.2	10,635	11,676	(8.9)
Total segment revenues	<u>173,487</u>	<u>100,491</u>	72.6	<u>307,431</u>	<u>263,680</u>	16.6
Partnership:						
Revenues from external customers	1,170	1,384	(15.5)	2,267	2,672	(15.2)
Intersegment revenues	18,531	18,997	(2.5)	37,840	37,980	(0.4)
Total segment revenues	<u>19,701</u>	<u>20,381</u>	(3.3)	<u>40,107</u>	<u>40,652</u>	(1.3)
Revenues including intersegment activity	748,461	411,414	81.9	1,326,533	1,070,599	23.9
Intersegment eliminations	(24,043)	(23,390)	2.8	(48,475)	(49,706)	(2.5)
Revenues as reported	<u>\$ 724,418</u>	<u>\$ 388,024</u>	86.7%	<u>\$ 1,278,058</u>	<u>\$ 1,020,893</u>	25.2%

	Three Months Ended June 30,		% Variance	Six Months Ended June 30,		% Variance
	2021	2020		2021	2020	
Cost of goods sold:						
Ethanol production	\$ 493,656	\$ 284,174	73.7%	\$ 909,181	\$ 773,324	17.6%
Agribusiness and energy services	170,181	95,803	77.6	286,255	252,305	13.5
Intersegment eliminations	(24,429)	(19,081)	28.0	(46,795)	(47,505)	(1.5)
	<u>\$ 639,408</u>	<u>\$ 360,896</u>	77.2%	<u>\$ 1,148,641</u>	<u>\$ 978,124</u>	17.4%

	Three Months Ended June 30,		% Variance	Six Months Ended June 30,		% Variance
	2021	2020		2021	2020	
Operating income (loss):						
Ethanol production ⁽¹⁾	\$ 33,543	\$ (18,792)	278.5%	\$ 13,223	\$ (79,573)	116.6%
Agribusiness and energy services	(851)	351	(342.5%)	12,495	2,911	329.2
Partnership	11,916	12,225	(2.5)	24,787	24,655	0.5
Intersegment eliminations	386	(4,283)	109.0	(1,680)	(2,150)	(21.9)
Corporate activities ⁽²⁾	(13,961)	(8,869)	57.4	13,555	(19,539)	169.4
	<u>\$ 31,033</u>	<u>\$ (19,368)</u>	260.2%	<u>\$ 62,380</u>	<u>\$ (73,696)</u>	184.6%

(1) Operating loss for ethanol production includes a goodwill impairment charge of \$24.1 million for the six months ended June 30, 2020.

(2) Corporate activities for the three and six months ended June 30, 2021 includes a \$3.8 million loss on sale of assets and a \$33.1 million gain on sale of assets, respectively.

	Three Months Ended June 30,		% Variance	Six Months Ended June 30,		% Variance
	2021	2020		2021	2020	
Depreciation and amortization:						
Ethanol production	\$ 18,483	\$ 17,184	7.6%	\$ 37,011	\$ 33,082	11.9%
Agribusiness and energy services	595	556	7.0	1,202	1,109	8.4
Partnership	795	966	(17.7)	1,682	1,927	(12.7)
Corporate activities	659	669	(1.5)	1,318	1,337	(1.4)
	<u>\$ 20,532</u>	<u>\$ 19,375</u>	6.0%	<u>\$ 41,213</u>	<u>\$ 37,455</u>	10.0%

* Percentage variance not considered meaningful.

We use EBITDA and adjusted EBITDA as segment measures of profitability to compare the financial performance of our reportable segments and manage those segments. EBITDA is defined as earnings before interest expense, income tax expense, including related tax expense of equity method investments, depreciation and amortization excluding the amortization of right-of-use assets and debt issuance costs. Adjusted EBITDA includes adjustments related to gains or losses on sale of assets, our proportional share of EBITDA adjustments of our equity method investees and noncash goodwill impairment. We believe EBITDA and adjusted EBITDA are useful measures to compare our performance against other companies. EBITDA and adjusted EBITDA should not be considered an alternative to, or more meaningful than, net income, which is prepared in accordance with GAAP. EBITDA and adjusted EBITDA calculations may vary from company to company. Accordingly, our computation of EBITDA and adjusted EBITDA may not be comparable with a similarly titled measure of other companies.

The following table reconciles net income (loss) including noncontrolling interest to adjusted EBITDA (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Net income (loss)	\$ 16,117	\$ (5,474)	\$ 14,138	\$ (15,821)
Interest expense ⁽¹⁾	19,058	9,670	50,737	19,367
Income tax benefit, net of equity method income tax expense	(4,783)	(7,677)	(2,921)	(49,475)
Depreciation and amortization ⁽²⁾	20,532	19,375	41,213	37,455
EBITDA	50,924	15,894	103,167	(8,474)
Loss (gain) on sale of assets, net	3,825	-	(33,068)	-
Proportional share of EBITDA adjustments to equity method investees	50	2,041	94	4,978
Noncash goodwill impairment	-	-	-	24,091
Adjusted EBITDA	\$ 54,799	\$ 17,935	\$ 70,193	\$ 20,595

(1) Interest expense for the three and six months ended June 30, 2021 includes a loss on settlement of convertible notes of \$9.5 million. Interest expense for the six months ended June 30, 2021 also includes a loss upon extinguishment of convertible notes of \$22.1 million.

(2) Excludes the change in operating lease right-of-use assets and amortization of debt issuance costs.

The following table reconciles segment EBITDA to consolidated adjusted EBITDA (in thousands):

	Three Months Ended June 30,		%	Six Months Ended June 30,		%
	2021	2020		2021	2020	
Adjusted EBITDA:						
Ethanol production	\$ 52,052	\$ (1,607)	*	\$ 50,263	\$ (45,732)	209.9%
Agribusiness and energy services	(254)	1,037	(124.5)	13,697	4,165	228.9
Partnership	12,880	13,366	(3.6)	26,813	26,914	(0.4)
Intersegment eliminations	386	(4,283)	109.0	(1,680)	(2,150)	(21.9)
Corporate activities ⁽¹⁾	(14,140)	7,381	*	14,074	8,329	69.0
EBITDA	50,924	15,894	220.4%	103,167	(8,474)	*
Loss (gain) on sale of assets, net	3,825	-	*	(33,068)	-	
Proportional share of EBITDA adjustments to equity method investees	50	2,041	(97.6)	94	4,978	(98.1)
Noncash goodwill impairment	-	-	*	-	24,091	*
Adjusted EBITDA	\$ 54,799	\$ 17,935	205.5%	\$ 70,193	\$ 20,595	240.8%

(1) Includes corporate expenses, offset by the loss on sale of assets of \$3.8 million and the gain on sale of assets of \$33.1 million for the three and six months ended June 30, 2021, respectively, and earnings from equity method investments of \$12.0 million and \$19.8 million for the three and six months ended June 30, 2020, respectively.

* Percentage variance not considered meaningful.

Three Months Ended June 30, 2021 Compared with the Three Months Ended June 30, 2020*Consolidated Results*

Consolidated revenues increased \$336.4 million for the three months ended June 30, 2021 compared with the same period in 2020 primarily due to higher prices and production volumes of ethanol, distillers grains and corn oil and increased trading revenues within our agribusiness and energy services segment.

Operating income increased \$50.4 million and adjusted EBITDA increased \$36.9 million for the three months ended June 30, 2021 compared with the same period last year primarily due to increased margins on ethanol production. Interest expense increased \$9.4 million for the three months ended June 30, 2021 compared with the same period in 2020 due to the \$9.5 million loss upon settlement of convertible notes recorded during the quarter. Income tax benefit was \$4.8 million for the three months ended June 30, 2021 compared with income tax benefit of \$11.5 million for the same period in 2020 primarily due to an increase in pretax book income for the three months ended June 30, 2021 offset by the tax benefit for utilization of previously recorded NOLs.

The following discussion provides greater detail about our second quarter segment performance.

Ethanol Production Segment

Key operating data for our ethanol production segment is as follows:

	Three Months Ended June 30,		% Variance
	2021	2020	
Ethanol sold (thousands of gallons)	190,913	149,872	27.4
Distillers grains sold (thousands of equivalent dried tons)	494	383	29.0
Corn oil sold (thousands of pounds)	54,875	39,496	38.9
Corn consumed (thousands of bushels)	65,424	51,908	26.0

Revenues in our ethanol production segment increased \$264.7 million for the three months ended June 30, 2021 compared with the same period in 2020 primarily due to higher prices and higher production volumes of ethanol, distillers grains and corn oil.

Cost of goods sold for our ethanol production segment increased \$209.5 million for the three months ended June 30, 2021 compared with the same period last year primarily due to higher production volumes. Operating income increased \$52.3 million and EBITDA increased \$53.7 million for the three months ended June 30, 2021 compared with the same period in 2020 primarily due to increased margins on ethanol production. Depreciation and amortization expense for the ethanol production segment was \$18.5 million for the three months ended June 30, 2021 compared with \$17.2 million for the same period last year.

Agribusiness and Energy Services Segment

Revenues in our agribusiness and energy services segment increased \$73.0 million while operating loss increased \$1.2 million and EBITDA decreased \$1.3 million for the three months ended June 30, 2021 compared with the same period in 2020. The increase in revenues was primarily due to an increase in ethanol, distillers grain and corn oil trading activity driven by higher production volumes. Operating loss increased and EBITDA decreased primarily as a result of lower trading margins.

Food and Ingredients Segment

The food and ingredients segment, which now represents food-grade corn oil production had no activity during the three months ended June 30, 2021.

Partnership Segment

Revenues generated by our partnership segment decreased \$0.7 million for the three months ended June, 2021, compared with the same period for 2020. Railcar transportation services revenue decreased \$0.6 million primarily due to a reduction in average volumetric capacity provided, and storage and throughput services revenue decreased \$0.2 million due to a decrease in throughput volumes, both of which were a result of our parent's sale of the Hereford ethanol plant in the fourth quarter of 2020 and the Ord ethanol plant in the first quarter of 2021. Operating income decreased \$0.3 million and EBITDA decreased \$0.5 million for the three months ended June 30, 2021 compared with the same period in 2020.

Intersegment Eliminations

Intersegment eliminations of revenues increased by \$0.7 million for the three months ended June 30, 2021 compared with the same period in 2020 primarily due to increased intersegment marketing and service fees within the agribusiness and energy services segment as a result of higher production volumes.

Corporate Activities

Operating income was impacted by a decrease in corporate activities of \$5.1 million for the three months ended June 30, 2021 compared to the same period in 2020 primarily due to the loss on sale of assets recorded during the current quarter.

Income Taxes

We recorded income tax benefit of \$4.8 million for the three months ended June 30, 2021, compared with income tax benefit of \$11.5 million for the same period in 2020. The decrease in the amount of tax benefit recorded for the three months ended June 30, 2021 was primarily due to an increase in pretax book income offset by the utilization of previously recorded NOLs compared to the same period in 2020 in which the company recorded a tax benefit associated with the carryback of the 2019 tax NOL to the 2014 tax year under the newly enacted CARES Act of 2020.

Income from Equity Method Investees

Income from equity method investees decreased \$11.9 million for the three months ended June 30, 2021 compared with the same period last year due primarily to the disposition of our GPCC joint venture during the fourth quarter of 2020.

Six Months Ended June 30, 2021 Compared with the Six Months Ended June 30, 2020

Consolidated Results

Consolidated revenues increased \$257.2 million for the six months ended June 30, 2021 compared with the same period in 2020 primarily due to higher prices on ethanol, distillers grains and corn oil and increased trading revenues within our agribusiness and energy services segment.

Operating income increased \$136.1 million and for the six months ended June 30, 2021 compared with the same period last year primarily due to the \$33.1 million gain on sale of assets and improved margins on ethanol production during the period, as well as the goodwill impairment charge of \$24.1 million during the prior period. Adjusted EBITDA increased \$49.6 million due to improved margins on ethanol production. Interest expense increased \$31.4 million for the six months ended June 30, 2021 compared with the same period in 2020 due to the loss upon settlement of convertible notes of \$22.1 million, recorded in the first quarter and the \$9.5 million loss upon settlement of convertible notes recorded during the second quarter. Income tax benefit was \$2.9 million for the six months ended June 30, 2021 compared with income tax benefit of \$55.7 million for the same period in 2020, primarily due to benefits recorded related to the CARES Act during the six months ended June 30, 2020.

The following discussion provides greater detail about our year-to-date segment performance.

Ethanol Production Segment

Key operating data for our ethanol production segment is as follows:

	Six Months Ended		% Variance
	June 30,		
	2021	2020	
Ethanol sold (thousands of gallons)	368,913	390,338	(5.5)
Distillers grains sold (thousands of equivalent dried tons)	967	1,025	(5.7)
Corn oil sold (thousands of pounds)	101,438	102,048	(0.6)
Corn consumed (thousands of bushels)	127,020	135,791	(6.5)

Revenues in our ethanol production segment increased \$212.7 million for the six months ended June 30, 2021 compared with the same period in 2020 primarily due to higher prices on ethanol, distillers grains and corn oil.

Cost of goods sold for our ethanol production segment increased \$135.9 million for the six months ended June 30, 2021 compared with the same period last year primarily due to higher production costs. Operating income increased \$92.8 million and EBITDA increased \$96.0 million for the six months ended June 30, 2021 compared with the same period in 2020 primarily due to improved margins as well as the \$24.1 million noncash impairment charge recorded during the three months ended March 31, 2020. Depreciation and amortization expense for the ethanol production segment was \$37.0 million for the six months ended June 30, 2021 compared with \$33.1 million for the same period last year.

Agribusiness and Energy Services Segment

Revenues in our agribusiness and energy services segment increased \$43.8 million while operating income increased \$9.6 million and EBITDA increased \$9.5 million for the six months ended June 30, 2021 compared with the same period in 2020. The increase in revenues was primarily due to an increase in ethanol, distillers grain and corn oil trading activity. Operating income and EBITDA increased primarily as a result of higher trading margins.

Food and Ingredients Segment

The food and ingredients segment, which now represents food-grade corn oil production had no activity during the six months ended June 30, 2021.

Partnership Segment

Revenues generated by our partnership segment decreased \$0.5 million for the six months ended June 30, 2021, compared with the same period for 2020. Railcar transportation services revenue decreased \$0.7 million due to a reduction in average volumetric capacity provided, as well as lower sublease revenue. Trucking and other revenue decreased \$0.1 million as a result of lower affiliate freight volume. Storage and throughput services revenue increased \$0.3 million due to an increase in the rate per gallon charged to Green Plains Trade beginning on July 1, 2020, partially offset by a decrease in throughput volumes as a result of our parent's sale of the Hereford ethanol plant in the fourth quarter of 2020 and the Ord ethanol plant in the first quarter of 2021. Operating income increased \$0.1 million and EBITDA decreased \$0.1 million for the six months ended June 30, 2021 compared with the same period in 2020.

Intersegment Eliminations

Intersegment eliminations of revenues decreased by \$1.2 million for the six months ended June 30, 2021 compared with the same period in 2020 primarily due to decreased intersegment marketing and service fees within the agribusiness and energy services segment as a result of lower production volumes.

Corporate Activities

Operating income was impacted by an increase in corporate activities of \$33.1 million for the six months ended June 30, 2021 compared to the same period in 2020 primarily due to the gain on sale of assets recorded during the current period.

Income Taxes

We recorded income tax benefit of \$2.9 million for the six months ended June 30, 2021, compared with income tax benefit of \$55.7 million for the same period in 2020. The decrease in the amount of tax benefit was primarily due to an increase in pretax book income offset by the tax benefit for the utilization of previously recorded NOLs compared to the tax benefit recorded for the same period in 2020 to reflect the benefit associated with the carry back of the 2019 tax NOLs to the 2014 tax year under the CARES Act of 2020, as well as the release of a previously recorded valuation allowance against the 2019 NOL and other deferred tax assets.

Income from Equity Method Investees

Income from equity method investees decreased \$19.7 million for the six months ended June 30, 2021 compared with the same period last year due primarily to the disposition of our GPCC joint venture during the fourth quarter of 2020.

Liquidity and Capital Resources

Our principal sources of liquidity include cash generated from operating activities and bank credit facilities. We fund our operating expenses and service debt primarily with operating cash flows. Capital resources for maintenance and growth expenditures are funded by a variety of sources, including cash generated from operating activities, borrowings under bank credit facilities, or issuance of senior notes or equity. Our ability to access capital markets for debt under reasonable terms depends on our financial condition, credit ratings and market conditions. We believe that our ability to obtain financing at reasonable rates and history of positive cash flow from operating activities, which have been positive for seven of the previous ten years, provide a solid foundation to meet our future liquidity and capital resource requirements.

On June 30, 2021, we had \$496.9 million in cash and equivalents, excluding restricted cash, consisting of \$431.7 million held at our parent company and the remainder held at our subsidiaries. Additionally, we had \$118.4 million in restricted cash at June 30, 2021. We also had \$294.2 million available under our committed revolving credit and term loan agreements, including \$5.0 million available under the partnership's revolving credit facility, some of which were subject to restrictions or other lending conditions. Funds at certain subsidiaries are generally required for their ongoing operational needs and restricted from distribution. At June 30, 2021, our subsidiaries had approximately \$169.4 million of net assets that were not available to use in the form of dividends, loans or advances due to restrictions contained in their credit facilities.

Net cash used in operating activities was \$30.2 million for the six months ended June 30, 2021 compared with net cash provided by operating activities of \$65.9 million for the same period in 2020. Operating activities compared to the prior year were primarily affected by changes in working capital when compared to the same period of the prior year. Net cash provided by investing activities was \$9.9 million for the six months ended June 30, 2021 compared with net cash used in investing activities of \$68.0 million for the same period in 2020. Investing activities compared to the prior year were primarily affected by proceeds from the sale of assets during 2021. Net cash provided by financing activities was \$360.8 million for the six months ended June 30, 2021 compared with net cash used in financing activities of \$84.3 million for the same period in 2020, primarily due to proceeds from the issuance of common stock and debt offerings during 2021.

Additionally, Green Plains Trade, Green Plains Grain and Green Plains Commodity Management use revolving credit facilities to finance working capital requirements. We frequently draw from and repay these facilities which results in significant cash movements reflected on a gross basis within financing activities as proceeds from and payments on short-term borrowings.

We incurred capital expenditures of approximately \$59.9 million during the six months ended June 30, 2021, primarily for Ultra High-Protein expansion projects at various facilities, Project 24 operating expense reduction and for various maintenance projects. Capital spending for the remainder of 2021 is expected to be between \$94.0 million and \$119.0 million for various projects, including the Ultra High-Protein expansion at our Wood River, Obion and Mount Vernon locations, which are expected to be financed with cash provided by operating activities, as well as borrowings under our \$75.0 million delayed draw loan and cash on hand.

Our business is highly sensitive to the price of commodities, particularly for corn, ethanol, distillers grains, corn oil and natural gas. We use derivative financial instruments to reduce the market risk associated with fluctuations in commodity prices. Sudden changes in commodity prices may require cash deposits with brokers for margin calls or significant liquidity with little advanced notice to meet margin calls, depending on our open derivative positions. We continuously monitor our exposure to margin calls and believe we will continue to maintain adequate liquidity to cover margin calls from our operating results and borrowings.

For each calendar quarter commencing with the quarter ended September 30, 2015, the partnership agreement requires the partnership to distribute all available cash, as defined, to its partners, including us, within 45 days after the end of each calendar quarter. Available cash generally means all cash and cash equivalents on hand at the end of that quarter less cash reserves established by the general partner, including those for future capital expenditures, future acquisitions and anticipated future debt service requirements, plus all or any portion of the cash on hand resulting from working capital borrowings made subsequent to the end of that quarter. On July 22, 2021, the board of directors of the general partner of the partnership declared a cash distribution of \$0.12 per unit on outstanding common and subordinated units. The distribution is payable on August 13, 2021, to unitholders of record at the close of business on August 6, 2021.

Our board of directors authorized a share repurchase program of up to \$200 million of our common stock. Under the program, we may repurchase shares in open market transactions, privately negotiated transactions, accelerated share buyback programs, tender offers or by other means. The timing and amount of repurchase transactions are determined by our management based on market conditions, share price, legal requirements and other factors. The program may be suspended, modified or discontinued at any time without prior notice. We did not repurchase any shares during the second quarter of 2021. To date, we have repurchased 7,396,936 of common stock for approximately \$92.8 million under the program.

We believe we have sufficient working capital for our existing operations. A continued sustained period of unprofitable operations, however, may strain our liquidity. We may sell additional assets or equity or borrow capital to improve or preserve our liquidity, expand our business or acquire businesses. We cannot provide assurance that we will be able to secure funding necessary for additional working capital or these projects at reasonable terms, if at all.

Debt

For additional information related to our debt, see *Note 8 – Debt* included as part of the notes to consolidated financial statements and *Note 12 – Debt* included as part of the notes to consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2020.

We were in compliance with our debt covenants at June 30, 2021. Based on our forecasts, we believe we will maintain compliance at each of our subsidiaries for the next twelve months or have sufficient liquidity available on a consolidated basis to resolve noncompliance. We cannot provide assurance that actual results will approximate our forecasts or that we will inject the necessary capital into a subsidiary to maintain compliance with its respective covenants. In the event a subsidiary is unable to comply with its debt covenants, the subsidiary's lenders may determine that an event of default has occurred, and following notice, the lenders may terminate the commitment and declare the unpaid balance due and payable.

As outlined in *Note 8 - Debt*, we use LIBOR as a reference rate for our credit facility. The administrator of LIBOR has announced it will cease the publication of the one week and two month LIBOR settings immediately following the LIBOR publication on December 31, 2021, and the remaining USD LIBOR settings immediately following the LIBOR publication on June 30, 2023. It is unclear if LIBOR will cease to exist or if new methods of calculating LIBOR will be established by the applicable phase out dates. We may need to amend our credit facility to determine the interest rate to replace LIBOR with the new standard that is established. The potential effect of any such event on interest expense cannot yet be determined.

Corporate Activities

In March 2021, we issued \$230.0 million of 2.25% convertible senior notes due in 2027, or the 2.25% notes. The 2.25% notes bear interest at a rate of 2.25% per year, payable on March 15 and September 15 of each year, beginning September 15, 2021. The initial conversion rate is 31.6206 shares of the company's common stock per \$1,000 principal amount of 2.25% notes (equivalent to an initial conversion price of approximately \$31.62 per share of the company's common stock), representing an approximately 37.5% premium over the offering price of the company's common stock. The conversion rate is subject to adjustment upon the occurrence of certain events, including but not limited to; the event of a stock dividend or stock split; the issuance of additional rights, options and warrants; spinoffs; the event of a cash dividend or distribution; or a tender or exchange offering. In addition, the company may be obligated to increase the conversion rate for any conversion that occurs in connection with certain corporate events, including the company's calling the 2.25% notes for redemption. We

may settle the 2.25% notes in cash, common stock or a combination of cash and common stock. At June 30, 2021, the outstanding principal balance on the 2.25% notes was \$230.0 million.

In June 2019, we issued \$115.0 million of 4.00% convertible senior notes due in 2024, or the 4.00% notes. The 4.00% notes are senior, unsecured obligations, with interest payable on January 1 and July 1 of each year, beginning January 1, 2020, at a rate of 4.00% per annum. The initial conversion rate will be 64.1540 shares of our common stock per \$1,000 principal amount of the 4.00% notes, which is equivalent to an initial conversion price of approximately \$15.59 per share of our common stock. The conversion rate will be subject to adjustment upon the occurrence of certain events, including but not limited to; the event of a stock dividend or stock split; the issuance of additional rights, options and warrants; spinoffs; the event of a cash dividend or distribution; or a tender or exchange offering. In addition, we may be obligated to increase the conversion rate for any conversion that occurs in connection with certain corporate events, including our calling the 4.00% notes for redemption. We may settle the 4.00% notes in cash, common stock or a combination of cash and common stock.

During May 2021, we entered into a privately negotiated agreement with certain noteholders of the company's 4.00% notes. Under this agreement, 3,568,705 shares of our common stock were exchanged for \$51.0 million in aggregate principal amount of the 4.00% notes. Common stock held as treasury shares were exchanged for the 4.00% notes. At June 30, 2021, the outstanding principal balance on the 4.00% notes was \$64.0 million.

In August 2016, we issued \$170.0 million of 4.125% convertible senior notes due in 2022, or 4.125% notes, which are senior, unsecured obligations with interest payable on March 1 and September 1 of each year. Prior to March 1, 2022, the 4.125% notes are not convertible unless certain conditions are satisfied. The initial conversion rate is 35.7143 shares of common stock per \$1,000 of principal which is equal to a conversion price of approximately \$28.00 per share. The conversion rate will be subject to adjustment upon the occurrence of certain events, including but not limited to; the event of a stock dividend or stock split; the issuance of additional rights, options and warrants; spinoffs; the event of a cash dividend or distribution; or a tender or exchange offering. We may settle the 4.125% notes in cash, common stock or a combination of cash and common stock.

In March 2021, concurrent with the issuance of the 2.25% notes, we used approximately \$156.5 million of the net proceeds of the 2.25% notes to repurchase approximately \$135.7 million aggregate principal amount of its 4.125% notes due 2022, in privately negotiated transactions. At June 30, 2021, the outstanding principal balance on the 4.125% notes was \$34.3 million.

Agribusiness and Energy Services Segment

Green Plains Trade has a \$300.0 million senior secured asset-based revolving credit facility to finance working capital up to the maximum commitment based on eligible collateral, which matures in July of 2022. This facility can be increased by up to \$70.0 million with agent approval. Advances are subject to variable interest rates equal to a daily LIBOR rate plus 2.25% or the base rate plus 1.25%. The unused portion of the credit facility is also subject to a commitment fee of 0.375% per annum. At June 30, 2021, the outstanding principal balance was \$100.8 million on the facility and the interest rate was 2.43%.

Green Plains Grain has a \$100.0 million senior secured asset-based revolving credit facility to finance working capital up to the maximum commitment based on eligible collateral, which matures in June of 2022. This facility can be increased by up to \$75.0 million with agent approval and up to \$50.0 million for seasonal borrowings. Total commitments outstanding under the facility cannot exceed \$225.0 million. At June 30, 2021, the outstanding principal balance was \$55.0 million on the facility and the interest rate was 3.20%.

Green Plains Grain has short-term inventory financing agreements with a financial institution with a maximum commitment of up to \$50.0 million, which matures June 2022. Green Plains Grain has accounted for the agreements as short-term notes, rather than sales, and has elected the fair value option to offset fluctuations in market prices of the inventory. Green Plains Grain had no short-term notes payable related to these inventory financing agreements as of June 30, 2021.

Green Plains Commodity Management has an uncommitted \$30.0 million revolving credit facility which matures April 30, 2023 to finance margins related to its hedging programs. Advances are subject to variable interest rates equal to LIBOR plus 1.75%. At June 30, 2021, the outstanding principal balance was \$18.2 million on the facility and the interest rate was 1.84%.

Ethanol Production Segment

On February 9, 2021, Green Plains SPE LLC, a wholly-owned special purpose subsidiary and parent of Green Plains Obion and Green Plains Mount Vernon issued \$125.0 million of junior secured mezzanine notes due 2026 with four funds and accounts managed by BlackRock for the purchase of all notes issued. At June 30, 2021, the outstanding principal balance was \$125.0 million on the loan and the interest rate was 11.75%.

Green Plains Wood River and Green Plains Shenandoah, wholly-owned subsidiaries of the company, have a \$75.0 million delayed draw loan agreement, which matures on September 1, 2035. At June 30, 2021, the outstanding principal balance was \$30.0 million on the loan and the interest rate was 6.52%.

We also have small equipment financing loans, finance leases on equipment or facilities, and other forms of debt financing.

Partnership Segment

Green Plains Partners, through a wholly owned subsidiary, had a \$135.0 million credit facility to fund working capital, acquisitions, distributions, capital expenditures and other general partnership purposes. The credit facility included a \$130.0 million term loan and a \$5.0 million revolving credit facility, maturing on December 31, 2021. During the six months ended June 30, 2021, principal payments of \$46.8 million were made on the term loan, including \$16.3 million of scheduled repayments, \$27.5 million related to the sale of the storage assets located adjacent to the Ord, Nebraska ethanol plant and a \$3.0 million prepayment made with excess cash. As of June 30, 2021, no additional prepayments on the term loan were required or paid. Monthly principal payments increased from \$2.5 million to \$3.2 million beginning May 15, 2021 through maturity. As of June 30, 2021, the term loan had a balance of \$53.2 million and an interest rate of 5.50%, and there were no outstanding swing line loans.

In certain situations we were required to make prepayments on the outstanding principal balance on the credit facility. If at any time our cash balance exceeds \$2.5 million for more than five consecutive business days, prepayments of outstanding principal were required in an amount equal to the excess cash. We were also required to prepay outstanding principal on the credit facility with 100% of net cash proceeds from any asset disposition or recovery event. Any prepayments on the term loan were applied to the remaining principal balance in inverse order of maturity, including the final payment.

On July 20, 2021, the partnership entered into an Amended and Restated Credit Agreement to its existing credit facility with funds and account managed by BlackRock and TMI Trust Company as administrative agent.

Under the terms of the agreement, BlackRock purchased the outstanding balance of the existing notes from Bank of America N.A., as previous administrative agent, and certain other commercial lending institutions. The Amended Credit Facility will mature on July 20, 2026 and the principal amount available is \$60.0 million. As a result of the new maturity date, \$50.0 million was reclassified from current maturities of long-term debt to long-term debt as of June 30, 2021. Interest on the Amended Credit Facility is based on 3-month LIBOR plus 8.00%, with a 0% LIBOR floor. Interest is payable on the 15th day of each March, June, September and December during the term with the first interest payment being September 15, 2021. The Amended Credit Facility will does not require any principal payments however we have the option to prepay \$1.5 million per quarter beginning twelve months following closing. Financial covenants of the agreement will include a maximum consolidated leverage ratio of 2.5x and a minimum consolidated debt service coverage ratio of 1.1x. The Amended Credit Facility is secured by substantially all of our partnership assets. The Amended Credit Facility removes the prior quarterly distribution restriction of \$0.12 per outstanding unit and allows for the distribution of all distributable cash flow and cash on hand subject to covenant compliance.

Contractual Obligations

Contractual obligations as of June 30, 2021 were as follows (in thousands):

Contractual Obligations	Payments Due By Period				
	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years
Long-term and short-term debt obligations ⁽¹⁾	\$ 726,239	\$ 227,512	\$ 37,974	\$ 192,642	\$ 268,111
Interest and fees on debt obligations ⁽²⁾	146,670	31,297	50,759	45,089	19,525
Operating lease obligations ⁽³⁾	80,923	19,335	31,111	15,933	14,544
Other	24,182	2,640	5,958	8,515	7,069
Purchase obligations:					
Forward grain purchase contracts ⁽⁴⁾	271,752	269,472	2,280	-	-
Other commodity purchase contracts ⁽⁵⁾	107,679	85,670	17,654	4,355	-
Other	705	499	206	-	-
Total contractual obligations	\$ 1,358,150	\$ 636,425	\$ 145,942	\$ 266,534	\$ 309,249

(1) Includes the current portion of long-term debt and future finance lease obligations and excludes the effect of any debt issuance costs.

(2) Interest amounts are calculated over the terms of the loans using current interest rates, assuming scheduled principal and interest amounts are paid pursuant to the debt agreements. Includes administrative and/or commitment fees on debt obligations.

(3) Operating lease costs are primarily for railcars and office space and exclude leases not yet commenced with undiscounted future lease payments of approximately \$4.0 million.

(4) Purchase contracts represent index-priced and fixed-price contracts. Index purchase contracts are valued at current quarter-end prices.

(5) Includes fixed-price ethanol, dried distillers grains and natural gas purchase contracts.

Critical Accounting Policies and Estimates

Key accounting policies, including those relating to revenue recognition, impairment of long-lived assets and goodwill, derivative financial instruments, and accounting for income taxes, are impacted significantly by judgments, assumptions and estimates used in the preparation of the consolidated financial statements. Information about our critical accounting policies and estimates are included in our annual report on Form 10-K for the year ended December 31, 2020.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We use various financial instruments to manage and reduce our exposure to various market risks, including changes in commodity prices and interest rates. We conduct all of our business in U.S. dollars and are not currently exposed to foreign currency risk.

Interest Rate Risk

We are exposed to interest rate risk through our loans which bear interest at variable rates. Interest rates on our variable-rate debt are based on the market rate for the lender's prime rate or LIBOR. A 10% increase in interest rates would affect our interest cost by approximately \$0.6 million per year. At June 30, 2021, we had \$715.0 million in debt, \$226.0 million of which had variable interest rates.

For additional information related to our debt, see *Note 8 – Debt* included as part of the notes to consolidated financial statements and *Note 12 – Debt* included as part of the notes to consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2020.

Commodity Price Risk

Our business is highly sensitive to commodity price risk, particularly for ethanol, corn, distillers grains, corn oil and natural gas. Ethanol prices are sensitive to world crude oil supply and demand, the price of crude oil, gasoline and corn, the price of substitute fuels, refining capacity and utilization, government regulation and consumer demand for alternative fuels. Corn prices are affected by weather conditions, yield, changes in domestic and global supply and demand, and government programs and policies. Distillers grains prices are impacted by livestock numbers on feed, prices for feed alternatives and supply, which is associated with ethanol plant production. Natural gas prices are influenced by severe weather in the summer and winter and hurricanes in the spring, summer and fall. Other factors include North American energy exploration and production, and the amount of natural gas in underground storage during injection and withdrawal seasons.

To reduce the risk associated with fluctuations in the price of ethanol, corn, distillers grains, corn oil, and natural gas, at times we use forward fixed-price physical contracts and derivative financial instruments, such as futures and options executed on the Chicago Board of Trade, the New York Mercantile Exchange and the Chicago Mercantile Exchange. We focus on locking in favorable operating margins, when available, using a model that continually monitors market prices for corn, natural gas and other inputs relative to the price for ethanol and distillers grains at each of our production facilities. We create offsetting positions using a combination of forward fixed-price purchases, sales contracts and derivative financial instruments. As a result, we frequently have gains on derivative financial instruments that are offset by losses on forward fixed-price physical contracts or inventories and vice versa. Our results are impacted by a mismatch of gains or losses associated with the derivative instrument during a reporting period when the physical commodity purchases or sale has not yet occurred. During the three and six months ended June 30, 2021, revenues included net losses of \$34.8 million and \$90.8 million, respectively, and cost of goods sold included net gains of \$21.5 million and \$47.0 million, respectively, associated with derivative financial instruments.

Ethanol Production Segment

In the ethanol production segment, net gains and losses from settled derivative instruments are offset by physical commodity purchases or sales to achieve the intended operating margins. To reduce commodity price risk caused by market fluctuations, we enter into exchange-traded futures and options contracts that serve as economic hedges.

Our exposure to market risk, which includes the impact of our risk management activities resulting from our fixed-price purchase and sale contracts and derivatives, is based on the estimated net income effect resulting from a hypothetical 10% change in price for the next 12 months starting on June 30, 2021, which is as follows (in thousands):

Commodity	Estimated Total Volume Requirements for the Next 12 Months (1)	Unit of Measure	Net Income Effect of Approximate 10% Change in Price
Ethanol	958,000	Gallons	\$ 142,590
Corn	331,000	Bushels	\$ 153,037
Distillers grains	2,400	Tons (2)	\$ 31,384
Corn oil	258,000	Pounds	\$ 10,974
Natural gas	27,700	MmBTU	\$ 5,188

(1) Estimated volumes assume production at full capacity.

(2) Distillers grains quantities are stated on an equivalent dried ton basis.

Agribusiness and Energy Services Segment

In the agribusiness and energy services segment, our inventories, physical purchase and sale contracts and derivatives are marked to market. To reduce commodity price risk caused by market fluctuations for purchase and sale commitments of grain and grain held in inventory, we enter into exchange-traded futures and options contracts that serve as economic hedges.

The market value of exchange-traded futures and options used for hedging are highly correlated with the underlying market value of grain inventories and related purchase and sale contracts for grain. The less correlated portion of inventory and purchase and sale contract market values, known as basis, is much less volatile than the overall market value of exchange-traded futures and tends to follow historical patterns. We manage this less volatile risk by constantly monitoring our position relative to the price changes in the market. Inventory values are affected by the month-to-month spread in the futures markets. These spreads are also less volatile than overall market value of our inventory and tend to follow historical patterns, but cannot be mitigated directly. Our accounting policy for futures and options, as well as the underlying inventory held for sale and purchase and sale contracts, is to reflect their current market values and include gains and losses in the consolidated statement of operations.

Our daily net commodity position consists of inventories related to purchase and sale contracts and exchange-traded contracts. The fair value of our position and market risk, based on the estimated net income effect resulting from a hypothetical 10% change in price for grain was not material at June 30, 2021.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to ensure information that must be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, as appropriate, to allow timely decisions regarding required financial disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Under the supervision and participation of our chief executive officer and chief financial officer, management carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of June 30, 2021 as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act and concluded that our disclosure controls and procedures were effective.

Changes in Internal Control over Financial Reporting

Management is responsible for establishing and maintaining effective internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of our consolidated financial statements for external purposes in accordance with U.S. generally accepted accounting principles. There were no material changes in our internal control over financial reporting that occurred during the period covered by this report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings.

We are currently involved in litigation that has arisen during the ordinary course of business. We do not believe this litigation will have a material adverse effect on our financial position, results of operations or cash flows.

Item 1A. Risk Factors.

Investors should carefully consider the discussion of risks and the other information in our annual report on Form 10-K for the year ended December 31, 2020, in Part I, Item 1A, “Risk Factors,” and the discussion of risks and other information in Part I, Item 2, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” under “Cautionary Information Regarding Forward-Looking Statements,” of this report. Investors should also carefully consider the discussion of risks with the partnership under the heading “Risk Factors” and other information in their annual report on Form 10-K for the year ended December 31, 2020. Although we have attempted to discuss key factors, our investors need to be aware that other risks may prove to be important in the future. New risks may emerge at any time and we cannot predict such risks or estimate the extent to which they may affect our financial performance. The following risk factors supplement and/or update risk factors previously disclosed and should be considered in conjunction with the other information included in, or incorporated by reference in, this quarterly report on Form 10-Q.

Our margins are dependent on managing the spread between the price of corn, natural gas, ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil.

Our operating results are highly sensitive to the spread between the corn and natural gas we purchase, and the ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil we sell. Price and supply are subject to various market forces, such as weather, domestic and global demand, shortages, export prices, crude oil prices, currency valuations and government policies in the United States and around the world, over which we have no control. Price volatility of these commodities may cause our operating results to fluctuate substantially. Increases in corn or natural gas prices or decreases in ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil prices may make it unprofitable to operate. No assurance can be given that we will purchase corn and natural gas or sell ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil at or near prices which would provide us with positive margins. Consequently, our results of operations and financial position may be adversely affected by increases in corn or natural gas prices or decreases in ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil prices.

We continuously monitor the margins at our ethanol plants using a variety of risk management tools and hedging strategies, when appropriate. In recent years, the spread between ethanol and corn prices has fluctuated widely, narrowed significantly and been negative at times. Fluctuations are likely to continue. A sustained narrow spread or further reduction in the spread between ethanol and corn prices as a result of increased corn prices or decreased ethanol prices, would adversely affect our results of operations and financial position. Should our combined revenue from ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil fall below our cost of production, we could decide to slow or suspend production at some or all of our ethanol plants, which also could adversely affect our results of operations and financial position.

The commodities we buy and sell are subject to price volatility and uncertainty.

Our operating results are highly sensitive to commodity prices.

Corn. We are generally unable to pass increased corn costs to our customers since ethanol competes with other fuels. We have seen considerable price volatility in corn prices not experienced in recent years. At certain corn prices, ethanol may be uneconomical to produce. Ethanol plants, livestock industries and other corn-consuming enterprises put significant price pressure on local corn markets. In addition, local corn supplies and prices could be adversely affected by prices for alternative crops, increasing input costs, changes in government policies, shifts in global markets, supply or demand, or damaging growing conditions, such as plant disease or adverse weather, including drought.

Ethanol. Our revenues are dependent on market prices for ethanol which can be volatile as a result of a number of factors, including: the price and availability of competing fuels; the overall supply and demand for ethanol and corn; the price of gasoline, crude oil and corn; and government policies.

Ethanol is marketed as a fuel additive that reduces vehicle emissions, an economical source of octanes and, to a lesser extent, a gasoline substitute. Consequently, gasoline supply and demand affect the price of ethanol. Should gasoline prices or demand decrease significantly, our results of operations could be materially impacted.

Ethanol imports also affect domestic supply and demand. Imported ethanol is not subject to an import tariff and, under the RFS II, sugarcane ethanol from Brazil is one of the most economical means for obligated parties to meet the advanced biofuel standard.

Industrial-grade alcohol is produced by further distillation processing of the 200-proof alcohol. Further distillation removes impurities from fuel-grade ethanol to allow for production of industrial-grade alcohol which can be used as an ingredient for sanitation products. Should industrial-grade alcohol prices or demand decrease significantly, our results of operations could be negatively impacted.

Distillers Grains. Increased U.S. dry mill ethanol production has resulted in increased distillers grains production. Should this trend continue, distillers grains prices could fall unless demand increases or other market sources are found. The price of distillers grains has historically been correlated with the price of corn. Occasionally, the price of distillers grains will lag behind fluctuations in corn or other feedstock prices, lowering our cost recovery percentage. Additionally, exports of distiller grains could be impacted by the enactment of foreign policy.

Distillers grains compete with other protein-based animal feed products. Downward pressure on other commodity prices, such as corn and soybeans, will generally cause the price of competing animal feed products to decline, resulting in downward pressure on the price of distillers grains.

Natural Gas. The price and availability of natural gas are subject to volatile market conditions. These market conditions are often affected by factors beyond our control, such as weather, drilling economics, overall economic conditions and government regulations. Significant disruptions in natural gas supply could impair our ability to produce ethanol. Furthermore, increases in natural gas price or changes in our cost relative to our competitors cannot be passed on to our customers, which may adversely affect our results of operations and financial position.

Corn Oil. Industrial corn oil is generally marketed as a renewable diesel and biodiesel feedstock; therefore, the price of corn oil is affected by demand for renewable diesel and biodiesel. Expanded profitability in the renewable diesel and biodiesel industry due to the extended blending tax credit and low carbon fuels standards could impact corn oil demand. In general, corn oil prices follow the prices of heating oil and soybean oil. Decreases in the price of corn oil could have an unfavorable impact on our business.

Business disruptions due to unforeseen operational failures or factors outside of our control could impact our ability to fulfill contractual obligations.

Natural disasters, pandemics, transportation issues, significant track damage resulting from a train derailment or strikes by our transportation providers could delay shipments of raw materials to our plants or deliveries of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil to our customers. If we are unable to meet customer demand or contract delivery requirements due to stalled operations caused by business disruptions, we could potentially lose customers.

Shifts in global markets, supply or demand changes, as well as adverse weather conditions, such as inadequate or excessive amounts of rain during the growing season, overly wet conditions, an early freeze or snowy weather during harvest could impact the supply of corn that is needed to produce ethanol. Corn stored in an open pile may be damaged by rain or warm weather before the corn is dried, shipped or moved into a storage structure.

Government mandates affecting ethanol could change and impact the ethanol market.

Under the provisions of the Energy Independence and Security Act (EISA), Congress expanded the Renewable Fuel Standard (RFS II). The RFS II mandates the minimum volume of renewable fuels that must be blended into the transportation fuel supply each year which affects the domestic market for ethanol. Each year the Environmental Protection Agency (EPA) is supposed to undertake rulemaking to set the Renewable Volume Obligation (RVO) for the following year, though at times months or years pass without a finalized RVO. Further, the EPA has the authority to waive the requirements, in whole or in part, if there is inadequate domestic renewable fuel supply or the requirement severely harms the economy or the environment. After 2022, volumes shall be determined by the EPA in coordination with the Secretaries of Energy and Agriculture, taking into account such factors as impact on environment, energy security, future rates of production, cost to

consumers, infrastructure, and other factors such as impact on commodity prices, job creation, rural economic development, or impact on food prices.

According to the RFS II, if mandatory renewable fuel volumes are reduced by at least 20% for two consecutive years, the EPA is required to modify, or reset, statutory volumes through 2022; the year through which the statutorily prescribed volumes run. While conventional ethanol maintained 15 billion gallons, 2019 was the second consecutive year that the total RVO was more than 20% below the statutory volumes levels. Thus, the EPA was expected to initiate a reset rulemaking, and modify statutory volumes through 2022, and do so based on the same factors they are to use in setting the RVOs post-2022. However, on December 19, 2019, the EPA announced it would not be moving forward with a reset rulemaking. It is unclear when or if they will propose a reset rulemaking. The EPA has stated an intention to propose a post-2022 'set' rulemaking by the end of 2021.

Volumes can also be impacted as small refineries can petition the EPA for a SRE which, if approved, waives their portion of the annual RVO requirements. The EPA, through consultation with the DOE and the USDA can grant them a full or partial waiver, or deny it outright within 90 days of submittal. A small refinery is defined as one that processes fewer than 75,000 barrels of petroleum per day.

Our operations could be adversely impacted by legislation, administration actions, EPA actions, or lawsuits that may reduce the RFS II mandated volumes of conventional ethanol and other biofuels through the annual RVO, the 2022 set rulemaking, the point of obligation for blending, or small refinery exemptions. A recent Supreme Court ruling held that the small refineries can continue to apply for an extension of their waivers from the RFS II, even if they have not been awarded a continuous string of exemptions. A recent D.C. Circuit Court of Appeals ruling held that the EPA overstepped its authority in extending the one pound Reid Vapor Pressure waiver for 10% ethanol blends to 15% ethanol blends in the summer, effectively limiting summertime sales of ethanol blends about 10% to flex fuel vehicles (FFVs).

Similarly, should federal mandates regarding oxygenated gasoline be repealed, the market for domestic ethanol could be adversely impacted. Economic incentives to blend based on the relative value of gasoline versus ethanol, taking into consideration the octane value of ethanol, environmental requirements and the RFS II mandate, may affect future demand. A significant increase in supply beyond the RFS II mandate could have an adverse impact on ethanol prices. Moreover, changes to RFS II could negatively impact the price of ethanol or cause imported sugarcane ethanol to become more economical than domestic ethanol. Likewise national, state and regional low carbon fuel standards (LCFS) like that of California, Oregon, Brazil or Canada could be favorable or harmful to conventional ethanol, depending on how the regulations are crafted.

Future demand may be influenced by economic incentives to blend based on the relative value of gasoline versus ethanol, taking into consideration the octane value of ethanol, environmental requirements and the value of RFS II credits or Renewable Identification Numbers (RINs). A significant increase in supply beyond the RFS II mandate could have an adverse impact on ethanol prices. Moreover, any changes to RFS II, whether by legislation, EPA action or lawsuit, originating from issues associated with the market price of RINs could negatively impact the demand for ethanol, discretionary blending of ethanol and/or the price of ethanol. Recent actions by the EPA to grant small refiner exemptions without accounting for the lost gallons, for example, resulted in lower RIN prices.

Congress first enacted CAFE in 1975 to reduce energy consumption by increasing the fuel economy of cars and light trucks. FFVs, which are designed to run on a mixture of fuels, including higher blends of ethanol such as E85, used to receive preferential treatment in the form of corporate average fuel economy (CAFE) credits. There are approximately 21 million FFVs on the road in the U.S. today, 16 million of which are light duty trucks. FFV credits have been decreasing since 2014 and were completely phased out in 2020. Absent CAFE preferences, auto manufacturers may not be willing to build flexible-fuel vehicles, which has the potential to slow the growth of E85 markets. However, California's Low Carbon Fuel Standard program (LCFS) has driven growth in E85 usage, and other state/regional LCFS programs have the potential to do the same.

To the extent federal or state laws or regulations are modified and/or enacted, it may result in the demand for ethanol being reduced, which could negatively and materially affect our financial performance.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

Employees surrender shares when restricted stock grants are vested to satisfy statutory minimum required payroll tax withholding obligations.

The following table lists the shares that were surrendered during the second quarter of 2021:

Period	Total Number of Shares Withheld for Employee Awards	Average Price Paid per Share
April 1 - April 30	-	\$ -
May 1 - May 31	21,132	31.97
June 1 - June 30	-	-
Total	<u>21,132</u>	<u>\$ 31.97</u>

Our board of directors authorized a share repurchase program of up to \$200 million of our common stock. Under this program, we may repurchase shares in open market transactions, privately negotiated transactions, accelerated buyback programs, tender offers or by other means. The timing and amount of the transactions are determined by management based on its evaluation of market conditions, share price, legal requirements and other factors. The program may be suspended, modified or discontinued at any time, without prior notice. We did not repurchase any shares during the second quarter of 2021. Since inception, the company has repurchased 7,396,936 shares of common stock for approximately \$92.8 million under the program.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.**Exhibit Index**

Exhibit No.	Description of Exhibit
10.1	Exchange Agreement, dated May 11, 2021, by and between Green Plains Inc and the applicable Noteholder. (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K dated May 11, 2021)
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and Section 302 of the Sarbanes-Oxley Act of 2002
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101	The following information from Green Plains Inc.'s Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2021, formatted in Inline Extensible Business Reporting Language (iXBRL): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Income, (iv) Consolidated Statements of Cash Flows, and (v) the Notes to Consolidated Financial Statements
104	The cover page from Green Plains Inc.'s Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2021, formatted in iXBRL.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

GREEN PLAINS INC.
(Registrant)

Date: August 2, 2021

By: /s/ Todd A. Becker
Todd A. Becker
President and Chief Executive Officer
(Principal Executive Officer)

Date: August 2, 2021

By: /s/ G. Patrich Simpkins Jr.
G. Patrich Simpkins Jr.
Chief Financial Officer
(Principal Financial Officer)

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a) AND SECTION 302 OF THE SARBANES OXLEY ACT OF 2002**

I, Todd A. Becker, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Green Plains Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 2, 2021

/s/ Todd A. Becker

Todd A. Becker
President and Chief Executive Officer
(Principal Executive Officer)

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a) AND SECTION 302 OF THE SARBANES OXLEY ACT OF 2002**

I, G. Patrich Simpkins Jr., certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Green Plains Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 2, 2021

/s/ G. Patrich Simpkins Jr.

G. Patrich Simpkins Jr.
Chief Financial Officer
(Principal Financial Officer)

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report of Green Plains Inc. (the “company”) on Form 10-Q for the fiscal quarter ended June 30, 2021, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Todd A. Becker, President and Chief Executive Officer of the company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

- 1) The Report fully complies with the requirements of Sections 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- 2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: August 2, 2021

/s/ Todd A. Becker

Todd A. Becker
President and Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report of Green Plains Inc. (the “company”) on Form 10-Q for the fiscal quarter ended June 30, 2021, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, G. Patrich Simpkins Jr., Chief Financial Officer of the company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

- 1) The Report fully complies with the requirements of Sections 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- 2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: August 2, 2021

/s/ G. Patrich Simpkins Jr.
G. Patrich Simpkins Jr.
Chief Financial Officer
