Advanced Emissions Solutions, Inc.

Advancing Cleaner Energy

Second Quarter 2020 Earnings Results Call

August 11, 2020

SAFE HARBOR

This presentation includes forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, which provides a "safe harbor" for such statements in certain circumstances. The forward-looking statements include statements or expectations regarding future cash flows from refined coal (“RC”); success on cash perseveration strategies; potential RC facility transactions with tax-equity investors and estimated tonnage associated with such potential transaction; opportunities and timing for optimizing operations including filling plant capacity; improving potential growth opportunities, including new markets; and expectations about normalization of coal-fired power generation. These statements are based on current expectations, estimates, projections, beliefs and assumptions of our management. Such statements involve significant risks and uncertainties. Actual events or results could differ materially from those discussed in the forward-looking statements as a result of various factors, including but not limited to, the rate of coal-fired power generation in the United States, changes and timing in laws, regulations, IRS interpretations or guidance, accounting rules and any pending court decisions, legal challenges to or repeal of them; changes in prices, economic conditions and market demand; the ability of the RC facilities to produce and sell coal that qualifies for tax credits; the timing, terms and changes in contracts for RC facilities, or failure to lease or sell RC facilities; tax equity lease renewals are not terminated or repriced; impact of competition; availability, cost of and demand for alternative tax credit vehicles and other technologies; technical, start-up and operational difficulties; availability of raw materials; customer demand for our products; competition within the industries in which we operate; availability of opportunities to further grow our business; loss of key personnel; ongoing effects of the COVID-19 pandemic and associated economic downturn on our operations and prospects; and other factors discussed in greater detail in our filings with the SEC. You are cautioned not to place undue reliance on such statements and to consult our SEC filings for additional risks and uncertainties that may apply to our business and the ownership of our securities. Our forward-looking statements are presented as of the date made, and we disclaim any duty to update such statements unless required by law to do so.

SECOND QUARTER BUSINESS SUMMARY

Refined Coal ("RC")

- Q2 distributions of $15.4M down 17% compared to prior year
- Q2 royalties $3.3M compared to $4.2M in 2019
- Segment operating income in Q2 was $10.8M compared to $24.6M in 2019
- Segment Adjusted EBITDA was $18.1 million, down 18%

Power Generation and Industrials ("PGI")

- Q2 revenue of $7.1M compared to $11.0M in 2019
- Segment operating loss of $25.7M vs. loss of $3.9M in 2019, driven by impairment in 2020
- Segment Adjusted EBITDA loss of $1.0M vs. loss of $3.1M in 2019
- Defending and growing core market share; building new product capabilities and diversifying the customer base

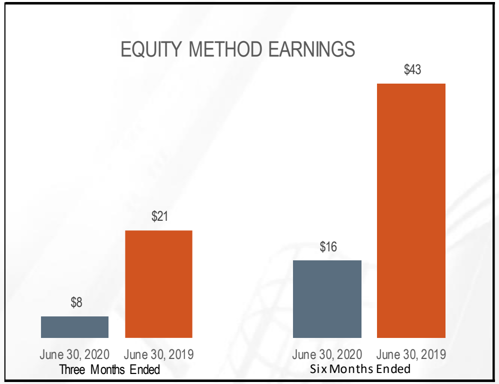
Consolidated Results & Capital Allocation

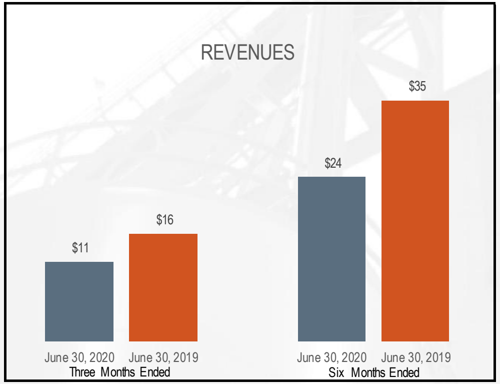
- Net loss of $23.8M (inclusive of impairment of $26.1M) compared to Net Profit of $8.1M in 2019
- Consolidated Adjusted EBITDA of $12.3M compared to $15.1M in 2019
- Reduced outstanding term-loan balance by $6M to $28M
- Focused on preserving liquidity

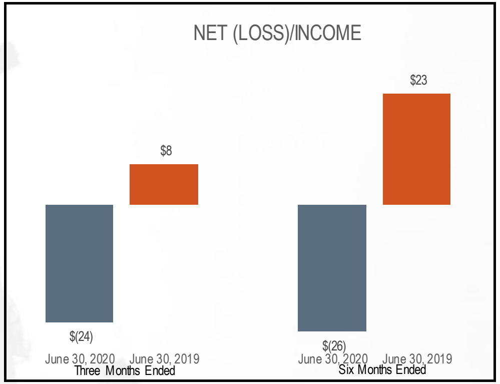
Outlook

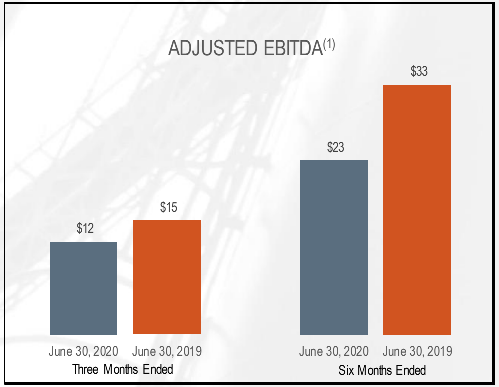
- Cashflows from RC segment projected to be between $100M to $125M through 2021, with potential to add incremental facilities
- Expect PGI performance improvement in late 2020 as plant capacity is utilized and low-cost nature of the assets is realized

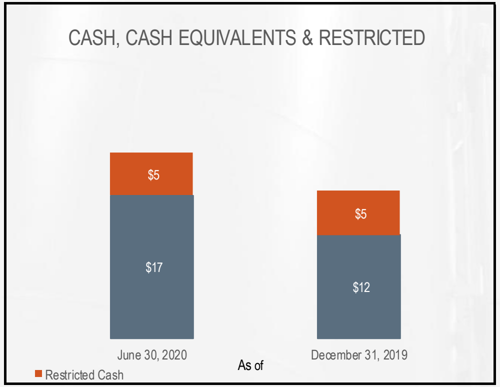
FINANCIAL HIGHLIGHTS

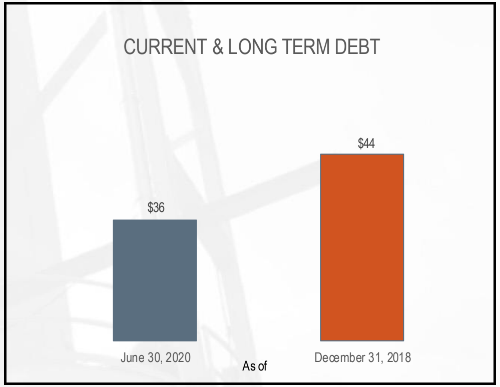










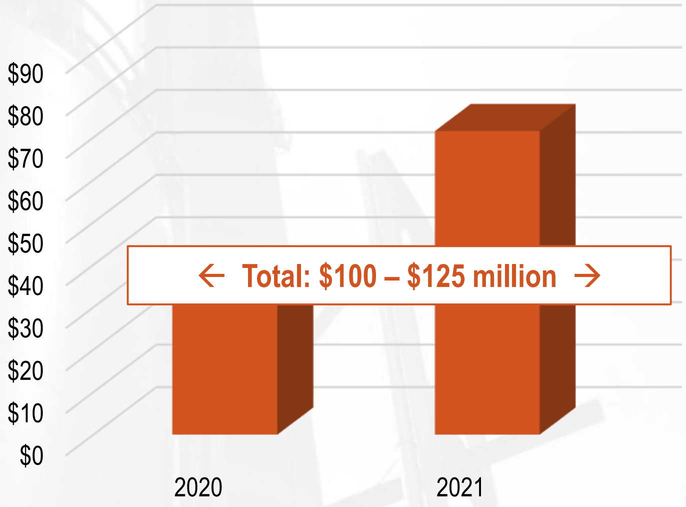


(1) ADJUSTED EBITDA is a non-GAAP measure. See Appendix for definitions and reconciliations.

EXPECTED FUTURE REFINED COAL ("RC") CASH FLOWS

- Based on 20 invested facilities as of June 30, 2020 and includes all net RC cash flows of ADES [(1)]
- Expected future net RC cash flows of $100 million to $125 million to ADES in total through 2021 [(2)]
- Two additional RC facility transactions in July 2020; one new facility and one sale of 49% of retained interest
  - Potential to add an additional net $5-7 million in future cash flows to ADES including impact of reduced operating expenses at Tinuum

EXPECTED FUTURE CASH FLOWS FROM RC BUSINESS [(1)]
(in millions)



(1) Net projected RC cash flows include the impact of all expected Tinuum distributions and royalty payments offset by the Company's federal and state tax payments as well as 453A interest payments
(2) The expectation is based on the following four key assumptions: 1) Tinuum Group continues to not operate retained facilities; 2) Tinuum Group does not have material unexpected CapEx or unusual operating expenses based on expectations as of the balance sheet date; 3) tax equity lease renewals are not terminated or repriced; and 4) coal-fired generation remains consistent with contractual expectations

ACTIVATED CARBON GROWTH OPPORTUNITIES

Mercury Removal

- Provider of choice for North American coal treatment market with significant traction in non-coal Industrial markets bound by regulations
- Potential for improving environment from the first half of 2020 due to increased power-generation demand, higher natural gas prices and impacts from the economy slowly reopening

Adjacent Segments

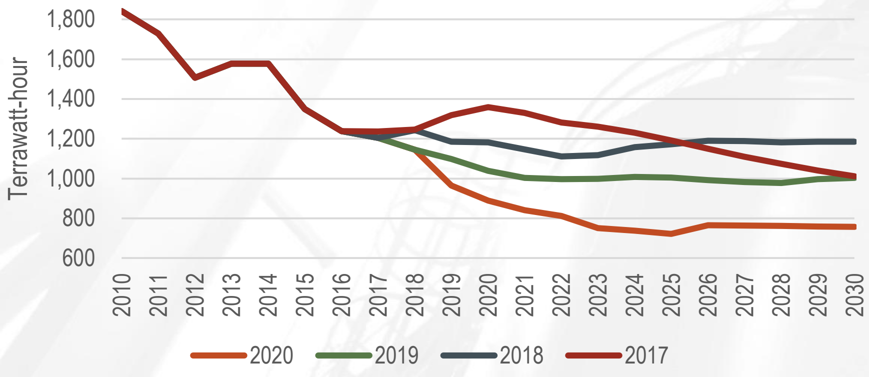
- Evaluating strategic opportunities in a structurally imbalanced market to significantly increase and diversify our addressable markets, utilization of our production capabilities and earnings profile

Municipal and Industrial Water

- Building out internal infrastructure to capture share in the growing municipal and industrial water markets. Market rationalization will be a critical catalyst to leverage the Red River plant for water markets

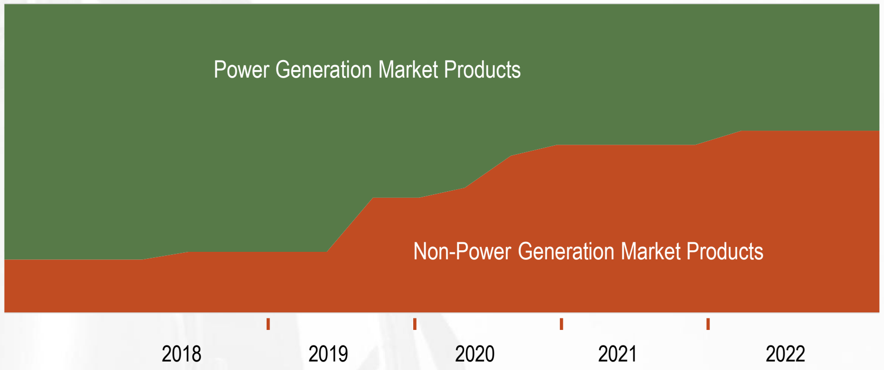
DIVERSIFICATION FROM COAL-FIRED POWER GENERATION

Historical and Forecasted Coal-fired Power Generation



Source: U.S. Energy Information Administration

Power Generation vs. Non-Power Generation Product Volume



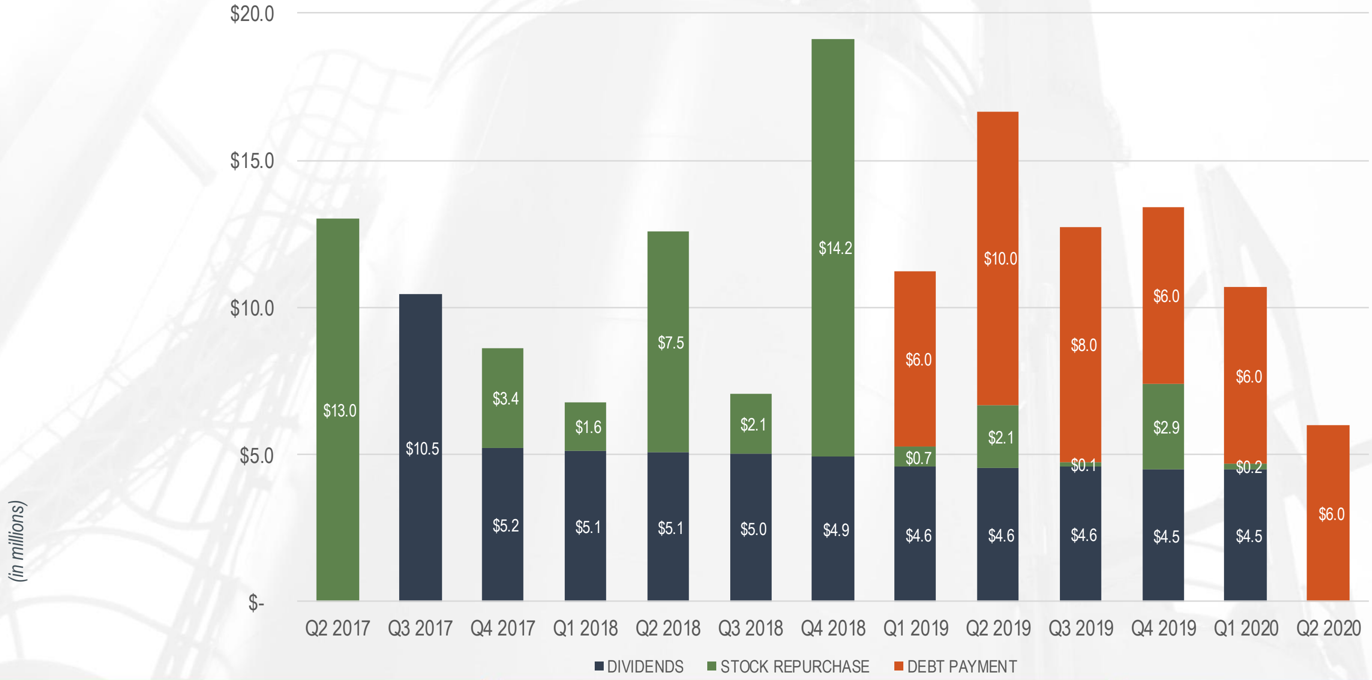
Source: Management Estimate; Not intended to be guidance or necessarily drawn to scale

- Significant 2020 forecast decline primarily due to natural gas and renewables as well as lower aggregate demand as a result of the COVID-19 economic disruption
- Coal-fired power generation expected to normalize after 2025
- Emission control requirements will remain in place and power utilities looking for long-term stable service providers; we are well positioned to be the partner of choice for utilities

- Increased application capabilities in 2019 to enable diversification beyond coal-fired power generation
- Spent last 12 months building new products and capabilities
- Rebalancing of operating cost via product rationalization
- Expect power generation market to be less than 50% of customer base as water and industrial market share grows through new business and other strategic partnerships

CAPITAL ALLOCATION

- $28 million balance on the senior term loan, which is subject to customary covenants as well as quarterly principal payments of $6.0 million
- Company has returned $106.4 million in dividends and share repurchases through the Capital Allocation program [(1)], since inception
- Near-term focus on debt repayment, risk management and liquidity



(1) The Company started its current Capital Allocation program in the second quarter of 2017.

2020 PRIORITIES

INCREASE AND OPTIMIZE REFINED COAL NET CASH FLOWS:

- Nurture current & add additional RC investors
- Maximize operational performance to produce RC and further develop customer relationships to ensure retention of RC customers
- Optimize resources at ADES to support Tinuum and public platform

DRIVE CARBON SOLUTIONS EARNINGS LEVERAGE:

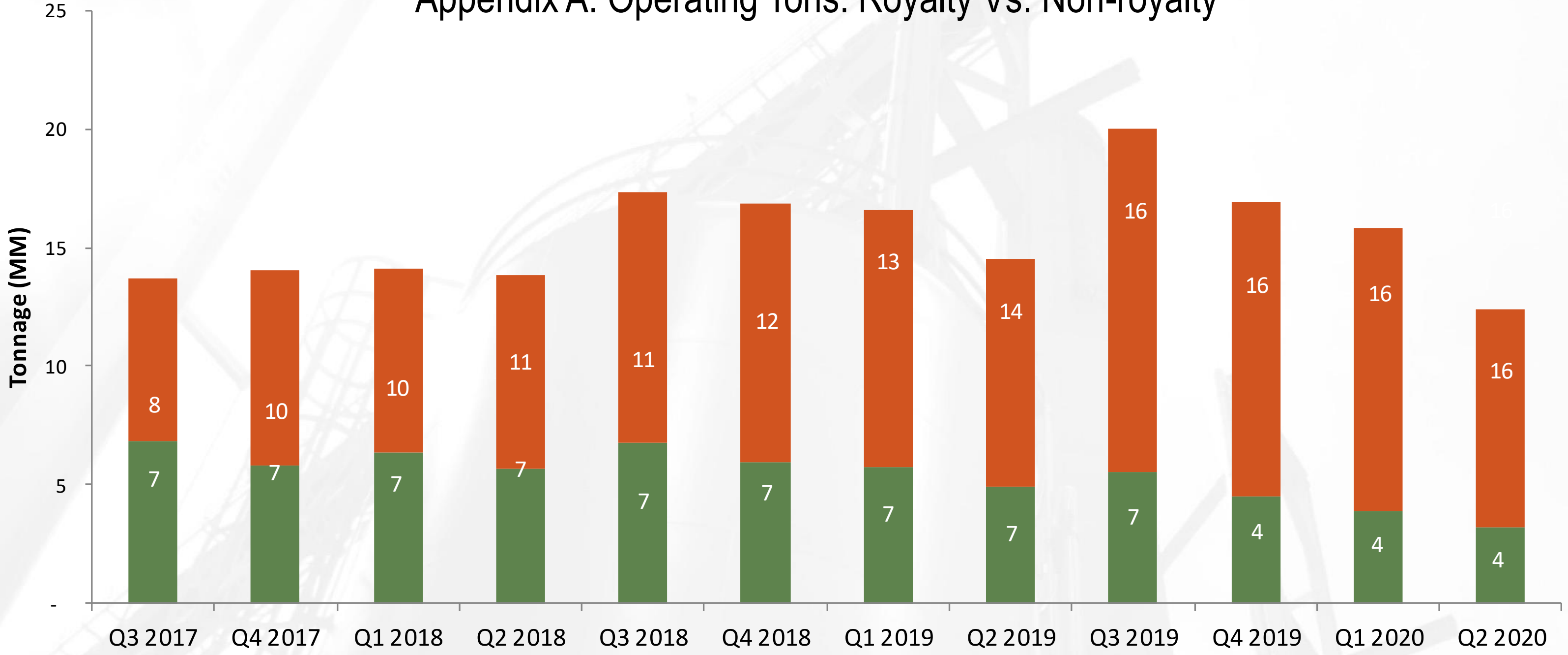
- Optimize Red River's capacity utilization to fully capture the low-cost benefit of the highly efficient plant
- Defend market share in a challenging mercury control market, while reducing costs
- Continued product momentum in Water & Industrial markets
- Leverage the asset's strategic advantages amidst expected market rationalization

RISK MITIGATION TODAY, OPTIMIZE SHAREHOLDER RETURNS TOMORROW:

- Suspension of quarterly dividend to preserve near-term cash amidst COVID-19 uncertainty
- Continued de-leveraging of the senior term loan
- Continue focus on stakeholder returns throughout a global pandemic
- Strategic asset utilization to drive stakeholder values amidst a challenging energy market

APPENDIX

Appendix A: Operating Tons: Royalty Vs. Non-royalty



Three Month Ended June 30, 2020	Operating Tons		QTD - Total
	Royalty	Non-Royalty	
Tonnage [(1)]	9,171	3,223	12,394
Count (#) [(2)]	16	4	20

Six Months Ended June 30, 2020	Operating Tons		YTD - Total
	Royalty	Non-Royalty	
Tonnage [(1)]	21,114	7,104	28,218
Count (#) [(2)]	16	4	20

Note: Numbers within bar graph represent the number of facilities per category as of the end of each quarter presented

(1) Tonnage information is based upon RC production for the three and six months ended June 30, 2020 (in thousands)

(2) Counts are based upon the number of facilities of which a royalty has been earned during the period

Appendix B: 10-Q Balance Sheet[(1)]

(in thousands, except share data)	As of June 30, 2020	As of December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 16,733	$ 12,080
Receivables, net	5,319	7,430
Receivables, related parties	3,480	4,246
Inventories, net	16,084	15,460
Prepaid expenses and other assets	18,959	7,832
Total current assets	60,575	47,048
Restricted cash, long-term	5,000	5,000
Property, plant and equipment, net of accumulated depreciation of $6,597 and $7,444, respectively	26,053	44,001
Intangible assets, net	2,293	4,169
Equity method investments	23,080	39,155
Deferred tax assets, net	2,448	14,095
Other long-term assets, net	13,881	20,331
Total Assets	$ 133,330	$ 173,799
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 7,174	$ 8,046
Accrued payroll and related liabilities	3,158	3,024
Current portion of long-term debt	25,583	23,932
Other current liabilities	3,377	4,311
Total current liabilities	39,292	39,313
Long-term debt, net of current portion	10,120	20,434
Other long-term liabilities	4,816	5,760
Total Liabilities	54,228	65,507
Commitments and contingencies (Note 10)		
Stockholders' equity:		
Preferred stock: par value of $.001 per share, 50,000,000 shares authorized, none outstanding	—	—
Common stock: par value of $.001 per share, 100,000,000 shares authorized, 23,110,285 and 22,960,157 shares issued, and 18,492,139 and 18,362,624 shares outstanding at June 30, 2020 and December 31, 2019, respectively	23	23
Treasury stock, at cost: 4,618,146 and 4,597,533 shares as of June 30, 2020 and December 31, 2019, respectively	(47,692)	(47,533)
Additional paid-in capital	99,732	98,466
Retained earnings	27,039	57,336
Total stockholders' equity	79,102	108,292
Total Liabilities and Stockholders' Equity	$ 133,330	$ 173,799

(1) See complete, unaudited Condensed Consolidated Financial Statements and Notes related thereto within the Quarterly Report on Form 10-Q for the period ended June 30, 2020.

Appendix C: 10-Q Income Statement[1]

(in thousands, except per share data)	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
Revenues:				
Consumables	$ 8,170	$ 11,386	$ 17,387	$ 26,495
License royalties, related party	3,313	4,191	6,359	8,411
Total revenues	11,483	15,577	23,746	34,906
Operating expenses:				
Consumables cost of revenue, exclusive of depreciation and amortization	7,416	12,286	18,907	26,394
Other sales cost of revenue, exclusive of depreciation and amortization	—	6	—	6
Payroll and benefits	3,812	2,798	6,554	5,354
Legal and professional fees	1,022	1,995	3,065	4,199
General and administrative	2,462	1,995	4,793	3,909
Depreciation, amortization, depletion and accretion	1,733	757	4,030	2,859
Impairment of long-lived assets	26,103	—	26,103	—
Total operating expenses	42,548	19,837	63,452	42,721
Operating loss	(31,065)	(4,260)	(39,706)	(7,815)
Other income (expense):				
Earnings from equity method investments	8,168	20,935	16,441	42,625
Interest expense	(962)	(1,987)	(2,172)	(4,091)
Other	148	60	191	130
Total other income	$ 7,354	$ 19,008	$ 14,460	$ 38,664
(Loss) income before income tax expense	(23,711)	14,748	(25,246)	30,849
Income tax expense	103	6,634	461	8,333
Net (loss) income	$ (23,814)	$ 8,114	$ (25,707)	$ 22,516
Earnings per common share (Note 1):				
Basic	$ (1.32)	$ 0.45	$ (1.43)	$ 1.23
Diluted	$ (1.32)	$ 0.44	$ (1.43)	$ 1.22
Weighted-average number of common shares outstanding:				
Basic	18,014	18,172	17,974	18,219
Diluted	18,014	18,377	17,974	18,412

(1) See complete, unaudited Condensed Consolidated Financial Statements and Notes related thereto within the Quarterly Report on Form 10-Q for the period ended June 30, 2020.

Appendix D: 10-Q Cash Flow[1]

(in thousands)	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
Cash flows from operating activities		
Net (loss) income	$ (25,707)	$ 22,516
Adjustments to reconcile net (loss) income to net cash provided by operating activities:		
Deferred income tax expense	11,647	4,946
Depreciation, amortization, depletion and accretion	4,030	2,859
Impairment of long-lived assets	26,103	—
Operating lease expense	1,353	1,580
Amortization of debt discount and debt issuance costs	709	851
Provision for inventory reserves	—	—
Stock-based compensation expense	1,644	858
Earnings from equity method investments	(16,441)	(42,625)
Other non-cash items, net	31	474
Changes in operating assets and liabilities:		
Receivables and related party receivables	2,854	4,044
Prepaid expenses and other assets	(11,129)	47
Inventories, net	(590)	3,794
Other long-term assets, net	(224)	(110)
Accounts payable	(1,095)	(758)
Accrued payroll and related liabilities	134	(4,829)
Other current liabilities	(515)	862
Operating lease liabilities	(1,213)	(1,563)
Other long-term liabilities	(22)	(462)
Distributions from equity method investees, return on investment	32,516	38,088
Net cash provided by operating activities	24,085	30,572

(1) See complete, unaudited Condensed Consolidated Financial Statements and Notes related thereto within the Quarterly Report on Form 10-Q for the period ended June 30, 2020.

Appendix E: 10-Q Cash Flow (continued)[1]

	Six Months Ended June 30,	
(in thousands)	2020	2019
Cash flows from investing activities		
Acquisition of business	$ —	$ (661)
Acquisition of property, plant, equipment, and intangible assets, net	(4,189)	(3,797)
Mine development costs	(507)	(521)
Net cash used in investing activities	(4,696)	(4,979)
Cash flows from financing activities		
Principal payments on term loan	(12,000)	(16,000)
Principal payments on finance lease obligations	(676)	(681)
Dividends paid	(4,828)	(9,179)
Repurchase of common shares	(159)	(2,831)
Repurchase of common shares to satisfy tax withholdings	(378)	(254)
Borrowings from Paycheck Protection Program Loan	3,305	—
Net cash used in financing activities	(14,736)	(28,945)
Increase (decrease) in Cash and Cash Equivalents and Restricted Cash	4,653	(3,352)
Cash and Cash Equivalents and Restricted Cash, beginning of period	17,080	23,772
Cash and Cash Equivalents and Restricted Cash, end of period	$ 21,733	$ 20,420
Supplemental disclosure of non-cash investing and financing activities:		
Acquisition of property, plant and equipment through accounts payable	$ 223	$ 1,561
Dividends payable	$ 77	$ 113

(1) See complete, unaudited Condensed Consolidated Financial Statements and Notes related thereto within the Quarterly Report on Form 10-Q for the period ended June 30, 2020.

Appendix F: Non-GAAP Financial Measure & Consolidated Adjusted EBITDA Reconciliation to Net Income

Note on Non-GAAP Financial Measures

To supplement the Company's financial information presented in accordance with U.S. generally accepted accounting principles, or GAAP, this investor presentation includes non-GAAP measures of certain financial performance. These non-GAAP measures include Consolidated Adjusted EBITDA, Segment EBITDA and RC Segment Adjusted EBITDA. The Company included non-GAAP measures because management believes that they help to facilitate comparison of operating results between periods. The Company believes the non-GAAP measures provide useful information to both management and users of the financial statements by excluding certain expenses that may not be indicative of core operating results and business outlook. These non-GAAP measures are not in accordance with, or an alternative to, measures prepared in accordance with GAAP and may be different from non-GAAP measures used by other companies. In addition, these non-GAAP measures are not based on any comprehensive set of accounting rules or principles. These measures should only be used to evaluate the Company's results of operations in conjunction with the corresponding GAAP measures.

The Company has defined Consolidated Adjusted EBITDA as net income, adjusted for the impact of the following items that are either non-cash or that the Company does not consider representative of its ongoing operating performance: depreciation, amortization, depletion and accretion, interest expense, net, income tax expense; then reduced by the non-cash impact of equity earnings from equity method investments and increased by cash distributions from equity method investments and impairment of long-lived assets. Because Consolidated Adjusted EBITDA, the Company believes that the measure is less susceptible to variances that affect the Company's operating performance.

Segment EBITDA is calculated as Segment operating income (loss) adjusted for the impact of the following items that are either non-cash or that the Company does not consider representative of its ongoing operating performance: depreciation, amortization, depletion and accretion and interest expense, net. When used in conjunction with GAAP financial measures, Segment EBITDA is a supplemental measure of operating performance that management believes is a useful measure related the Company's PGI segment performance and the PGI segment performance relative to the performance of their respective competitors as well as performance period over period. Additionally, the Company believes these measure are less susceptible to variances that affect their respective operating performance results.

The Company defines RC Segment Adjusted EBITDA as RC Segment EBITDA reduced by the non-cash impact of equity earnings from equity method investments and increased by cash distributions from equity method investments.

The Company defined PGI Segment Adjusted EBITDA as PGI Segment EBITDA increased by the non-cash impact of impairment.

The Company presents the non-GAAP measures because the Company believes they are useful as supplemental measures in evaluating the performance of the Company's operating performance and provide greater transparency into the results of operations. The Company's management uses Consolidated Adjusted EBITDA, RC Segment Adjusted EBITDA and Segment EBITDA as factors in evaluating the performance of its business.

The adjustments to Consolidated Adjusted EBITDA, RC Segment Adjusted EBITDA, PGI Segment Adjusted EBITDA and Segment EBITDA in future periods are generally expected to be similar. Consolidated Adjusted EBITDA, RC Segment Adjusted EBITDA and Segment EBITDA have limitations as analytical tools, and you should not consider these measures in isolation or as a substitute for analyzing the Company's results as reported under GAAP.

Appendix F: Non-GAAP Financial Measures & Consolidated Adjusted EBITDA Reconciliation to Net Income (continued)

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
Net (loss) income	$ (23,814)	$ 8,114	$ (25,707)	$ 22,516
Depreciation, amortization, depletion and accretion	1,733	757	4,030	2,859
Interest expense, net	945	1,921	2,113	3,956
Income tax expense	103	6,634	461	8,333
Consolidated EBITDA	(21,033)	17,426	(19,103)	37,664
Impairment	26,103	—	26,103	—
Equity earnings	(8,168)	(20,935)	(16,441)	(42,625)
Cash distributions from equity method investees	15,400	18,600	32,516	38,088
Consolidated Adjusted EBITDA	$ 12,302	$ 15,091	$ 23,075	$ 33,127

Appendix G: RC Segment Adjusted EBITDA Reconciliation to Segment Operating Income

(in thousands)	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
RC Segment operating income	$ 10,777	$ 24,596	$ 21,637	$ 49,979
Depreciation, amortization, depletion and accretion	32	7	160	30
Interest expense	28	326	59	648
RC Segment EBITDA	10,837	24,929	21,856	50,657
Equity earnings	(8,168)	(20,935)	(16,441)	(42,625)
Cash distributions from equity method investees	15,400	18,600	32,516	38,088
RC Segment Adjusted EBITDA	$ 18,069	$ 22,594	$ 37,931	$ 46,120

Appendix H: PGI Segment EBITDA Reconciliation to Segment Operating Loss

(in thousands)	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
PGI Segment operating loss (1) (2)	$ (25,737)	$ (3,862)	$ (32,314)	$ (7,324)
Depreciation, amortization, depletion and accretion	1,389	685	3,424	2,645
Interest expense, net	93	57	187	188
PGI Segment EBITDA loss	(24,255)	(3,120)	(28,703)	(4,491)
Impairment	23,232	—	23,232	—
PGI Segment Adjusted EBITDA loss	$ (1,023)	$ (3,120)	$ (5,471)	$ (4,491)

(1) Included in segment operating loss for the three and six months ended June 30, 2020 was $0.4 million related to sequestration of certain of our employees at our manufacturing plant in Louisiana.

(2) Included in segment operating loss for the three and six months ended June 30, 2019 was approximately $1.3 million and $4.7 million, respectively, of costs recognized as a result of the step-up in inventory fair value recorded from the acquisition of Carbon Solutions.