Advanced Emissions Solutions, Inc.

Advancing Cleaner Energy

Fourth Quarter & Full Year 2020 Earnings Results Call

March 11, 2021

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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"); opportunities for optimizing APT operations by increased utilization of plant capacity and expected APT segment performance improvement; projected annual revenue and annual EBITDA growth in the APT segment; success on RC cash perseveration strategies; improving potential growth opportunities, including new markets and other APT strategic initiatives; our success in executing our 2021 priorities; expected schedule of repayment of senior term loan and expected timeline and costs for mine reclamation completion. 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, and accounting rules; changes in prices, economic conditions and market demand; impact of competition; technical, start-up and operational difficulties; availability of raw materials; customer demand for our APT 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.

FOURTH QUARTER AND FULL YEAR 2020 BUSINESS SUMMARY

Refined Coal ("RC")

- Q4 and FY 2020 distributions were $20.2M and $62.4M, respectively
- Q4 and FY 2020 royalties were $3.5M and $13.4M, respectively
- Q4 and FY 2020 Segment Adjusted EBITDA(1) were $23.5M and $74.6M, respectively
- Added 2 invested facilities in Q4, 3 total in 2020

Advanced Purification Technologies("APT")

- Formerly PGI segment, renamed to reflect broader scope
- Q4 and FY 2020 revenue of $14.9M and $48.1M, respectively
- Q4 and FY 2020 Segment operating income of $0.7M and loss of $40.0M, respectively. FY inclusive of $26.1M non-cash impairment
- Q4 and FY 2020 Segment Adjusted EBITDA (1) of $2.3M and loss of $6.6M, respectively

Consolidated Results & Capital Allocation

- Q4 net income of $0.4M, FY 2020 net loss of $20.3M inclusive of a $26.1M non-cash impairment adjustment
- Q4 and FY 2020 consolidated Adjusted EBITDA (2) of $23.4M and $55.1M, respectively
- Reduced outstanding term-loan balance by $6.0M to $16.0M, with anticipation to pay off prior to term

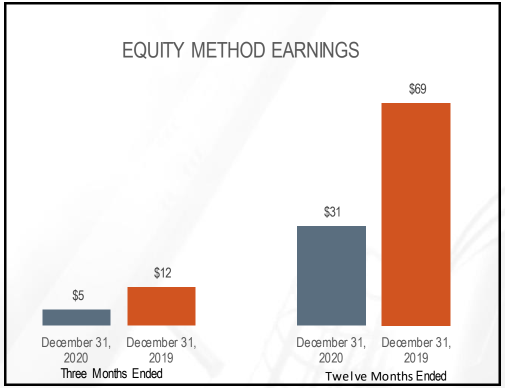
Outlook

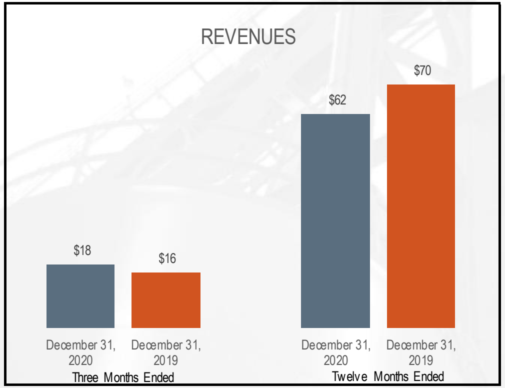
- Net, after-tax cash flows from RC segment projected to be between $70M to $90M
- Expect APT segment performance improvement in 2021 as plant capacity is utilized and low-cost nature of the asset is realized
- Reduce power generation exposure in APT to <50%

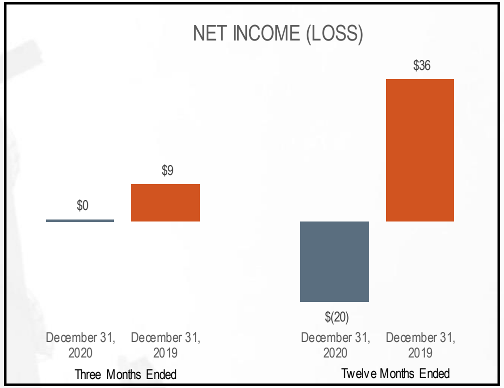
(1) Segment Adjusted EBITDA is a non-GAAP measure. See Appendix for definitions and reconciliations.

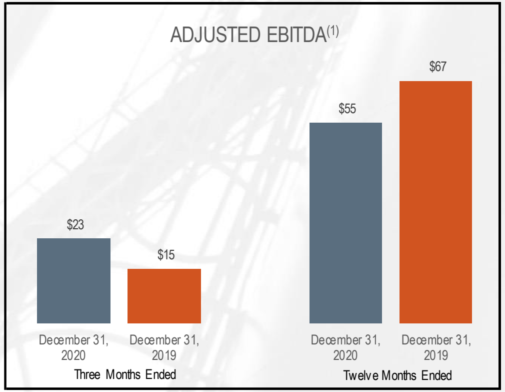
(2) Adjusted EBITDA is a non-GAAP measure. See Appendix for definitions and reconciliations

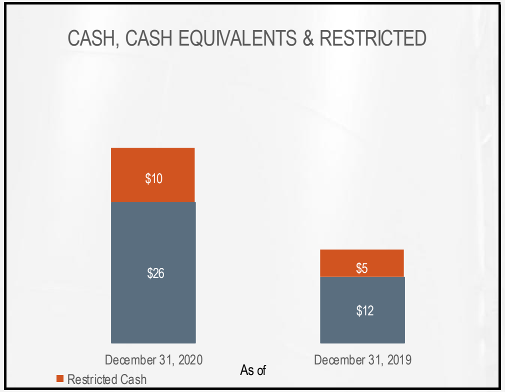
FINANCIAL HIGHLIGHTS

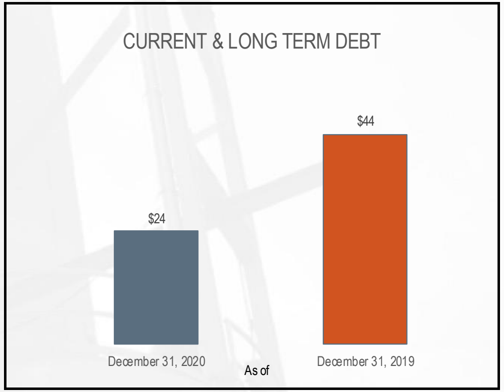










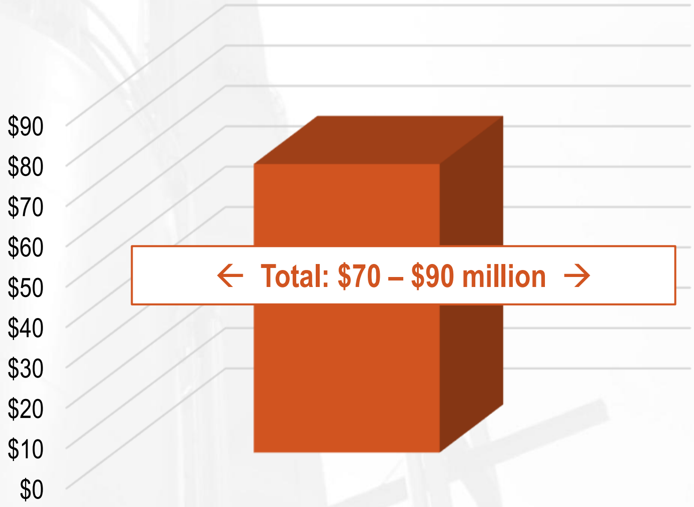


(1) ADJUSTED EBITDA is a non-GAAP measure. See Appendix for definitions and reconciliations.

EXPECTED FUTURE REFINED COAL ("RC") CASH FLOWS

- Based on 23 invested facilities as of December 31, 2020 and includes all net RC cash flows of ADES [(1)]
- Expected future net RC cash flows of $70 million to $90 million to ADES in total [(2)]
- Two additional RC facility transactions in October and December 2020
- Absent an extension to the scheduled tax credit expiration on December 31, 2021, which is not expected, Tinuum does not anticipate to have any additional facility transactions

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

Potential for improving environment relative to 2020 due to increased economic activity and power-generation demand, higher natural gas prices, enhanced customer and product mix and market rationalization

Municipal & Industrial Water

Continue to capture share in the growing municipal and industrial water markets to broaden and diversify customer and end-market mix

Adjacent Markets

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

Provider of Choice

Premier provider of activated carbon and positioned to capitalize on emerging opportunities and market rationalization

Supply agreements with Cabot will improve operating leverage, optimize our product and customer mix, strengthen our competitive position in non-power generations markets and open doors to international and adjacent markets

RECAP OF SUPPLY AGREEMENTS WITH CABOT

15-Year Master Supply Agreement

- 15-year exclusive supply agreement for North American lignite based GAC and PAC products for Cabot
- Market applications will include treatment of water, air, food and beverages, pharmaceuticals and other liquids and gases
- ADES acquired Cabot's lignite mine in Marshall, Texas and immediately began reclamation work
- Immediately began supplying Cabot with AC products
- Expect that 70% of the mine reclamation spend will be completed in the first 24 months, and Cabot will share in the expenditure

Economic Impact

- Projected incremental annual Revenue growth of 30% - 40%
- Projected incremental annual EBITDA growth of $10-$15 million
- Reduce power generation exposure to <50% of product portfolio
- Provides end-market diversification

5-Year International Supply Agreement

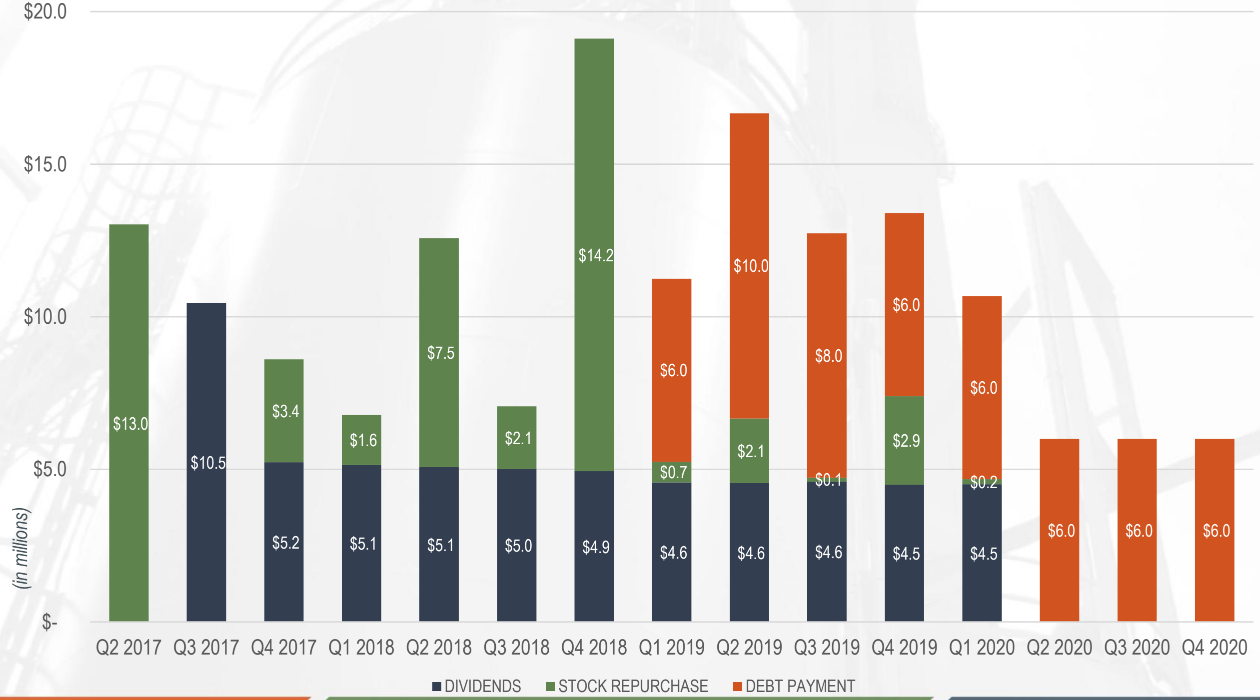
- 5-year supply agreement with Cabot subsidiary, Cabot Norit Nederland B.V., to supply Cabot with lignite activated carbon products and other ADES proprietary products
- Market applications will include mercury removal in utility and industrial coal-fired power plants
- Cabot will be sole reseller of the products in Europe, Turkey, the Middle East and Africa (EMEA)
- Agreement is separate and incremental to 15-Year Master Supply Agreement

Economic Impact

- Ultimate economic impact TBD as mercury regulations come online in the EU during 2021 and beyond
- Provides geographic and international diversification

CAPITAL ALLOCATION

- $16.0 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. Expect to pay off term loan balance prior to Q4 2021 maturity



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

2021 PRIORITIES

OPTIMIZE REFINED COAL NET CASH FLOWS:

- Protect current forecasted cash flow stream to support capital allocation initiatives
- Maximize operational performance to produce RC and execute on plans for end of Tinuum businesses

FURTHER SCALE APT SEGMENT TO IMPROVE PROFITABILITY:

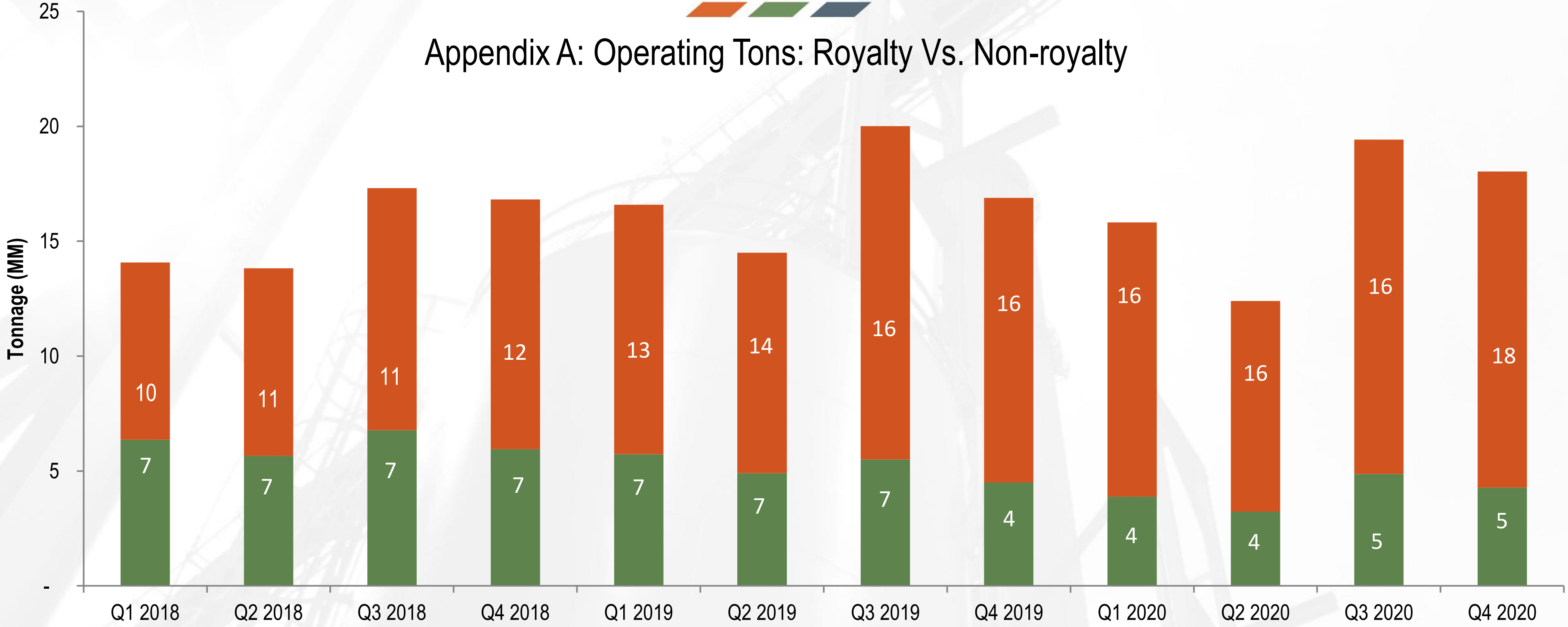
- Optimize Red River’s capacity utilization to fully capture the low-cost benefit of the highly efficient plant
- Defend share in mercury control market while diversifying further into non-power generation markets to improve the earnings profile of the business
- Remain vigilant for additional rationalization opportunities

OPTIMIZE CASH FLOWS & ASSETS TO DRIVE SHAREHOLDER VALUE:

- Continued de-leveraging of the senior term loan
- Invest in APT segment’s strategic initiatives to solidify position as provider-of-choice for activated carbon

APPENDIX

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



Three Month Ended December 31, 2020	Operating Tons		QTD - Total
	Royalty	Non-Royalty	
Tonnage (1)	13,756	4,276	18,032
Count (#) (2)	18	5	23

Twelve Months Ended December 31, 2020	Operating Tons		YTD - Total
	Royalty	Non-Royalty	
Tonnage (1)	49,425	16,250	65,675
Count (#) (2)	18	5	23

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 twelve months ended December 31, 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-K Balance Sheet[1]

(in thousands, except share data)	As of December 31, 2020	2019
ASSETS		
Current assets:		
Cash, cash equivalents and restricted cash	$ 30,932	$ 12,080
Receivables, net	13,125	7,430
Receivables, related party	3,453	4,246
Inventories, net	9,882	15,460
Prepaid expenses and other current assets	4,597	7,832
Total current assets	61,989	47,048
Restricted cash, long-term	5,000	5,000
Property, plant and equipment, net of accumulated depreciation of $3,340 and $7,444, respectively	29,433	44,001
Intangible assets, net	1,964	4,169
Equity method investments	7,692	39,155
Deferred tax assets, net	10,604	14,095
Other long-term assets, net	29,989	20,331
Total Assets	$ 146,671	$ 173,799
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 7,849	$ 8,046
Accrued payroll and related liabilities	3,257	3,024
Current portion of long-term debt	18,441	23,932
Other current liabilities	12,996	4,311
Total current liabilities	42,543	39,313
Long-term debt, net of current portion	5,445	20,434
Other long-term liabilities	13,473	5,760
Total Liabilities	61,461	65,507
Commitments and contingencies (Notes 14)		
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, 23,141,284 and 22,960,157 shares issued and 18,523,138 and 18,362,624 shares outstanding at December 31, 2020 and 2019, respectively	23	23
Treasury stock, at cost: 4,618,146 and 4,597,533 shares as of December 31, 2020 and 2019, respectively	(47,692)	(47,533)
Additional paid-in capital	100,425	98,466
Retained earnings	32,454	57,336
Total stockholders' equity	85,210	108,292
Total Liabilities and Stockholders' equity	$ 146,671	$ 173,799

(1) See complete Consolidated Financial Statements and Notes related thereto within the Annual Report on Form 10-K for the period ended December 31, 2020.

Appendix C: 10-K Income Statement[1]

(in thousands, except per share data)	Years Ended December 31, 2020	2019
Revenues:		
Consumables	$ 48,122	$ 53,187
License royalties, related party	13,440	16,899
Other	15	—
Total revenues	61,577	70,086
Operating expenses:		
Consumables cost of revenue, exclusive of depreciation and amortization	45,176	49,443
Other cost of revenue, exclusive of depreciation and amortization	(563)	—
Payroll and benefits	10,621	10,094
Legal and professional fees	5,585	9,948
General and administrative	8,228	8,123
Depreciation, amortization, depletion and accretion	8,537	7,371
Impairment of long-lived assets	26,103	—
Gain on settlement	(1,129)	—
Total operating expenses	102,558	84,979
Operating loss	(40,981)	(14,893)
Other income (expense):		
Earnings from equity method investments	30,978	69,176
Interest expense	(3,920)	(7,174)
Other	132	427
Total other income	27,190	62,429
(Loss) income before income tax expense	(13,791)	47,536
Income tax expense	6,511	11,999
Net (loss) income	$ (20,302)	$ 35,537
(Loss) earnings per common share (Note 1):		
Basic	$ (1.12)	$ 1.96
Diluted	$ (1.12)	$ 1.93
Weighted-average number of common shares outstanding:		
Basic	18,044	18,154
Diluted	18,044	18,372
Cash dividends declared per common share outstanding:	$ 0.25	$ 1.00

(1) See complete Consolidated Financial Statements and Notes related thereto within the Annual Report on Form 10-K for the period ended December 31, 2020.

Appendix D: 10-K Cash Flow(1)

(in thousands)	Years Ended December 31, 2020	2019
Cash flows from operating activities		
Net (loss) income	$ (20,302)	$ 35,537
Adjustments to reconcile net (loss) income to net cash used in operating activities:		
Deferred income tax expense	3,491	8,655
Depreciation, amortization, depletion and accretion	8,537	7,371
Amortization of debt discount and debt issuance costs	1,418	1,678
Operating lease expense	3,559	3,192
Impairment of long-lived assets	26,103	—
Gain on settlement	(1,129)	—
Recovery of accounts receivable and other receivables	(990)	—
Stock-based compensation expense	2,496	2,011
Earnings from equity method investments	(30,978)	(69,176)
Other non-cash items, net	192	638
Changes in operating assets and liabilities, net of effects of acquired businesses:		
Receivables, net	(2,541)	2,124
Related party receivables	794	37
Prepaid expenses and other current assets	3,234	(2,200)
Inventories, net	4,748	5,505
Other long-term assets, net	(1,005)	(262)
Accounts payable	(196)	2,218
Accrued payroll and related liabilities	233	(5,255)
Other current liabilities	(520)	(261)
Operating lease liabilities	(2,200)	(3,180)
Other long-term liabilities	(2,916)	(258)
Distributions from equity method investees, return on investment	62,441	73,888
Net cash provided by operating activities	54,469	62,262

(1) See complete Consolidated Financial Statements and Notes related thereto within the Annual Report on Form 10-K for the period ended December 31, 2020.

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Appendix D: 10-K Cash Flow (continued)(1)

(in thousands)	Years Ended December 31, 2020	2019
Cash flows from investing activities		
Acquisition of property, plant, equipment, and intangible assets, net	(6,685)	(7,851)
Mine development costs	(1,202)	(4,726)
Acquisition of business, net of cash acquired	—	(661)
Net cash used in investing activities	(7,887)	(13,238)
Cash flows from financing activities		
Principal payments on term loan	(24,000)	(30,000)
Borrowings from Paycheck Protection Program Loan	3,305	—
Dividends paid	(4,979)	(18,274)
Principal payments on finance lease obligations	(1,360)	(1,354)
Repurchase of shares to satisfy tax withholdings	(537)	(451)
Repurchase of common shares	(159)	(5,793)
Other	—	156
Net cash used in financing activities	(27,730)	(55,716)
Increase (decrease) in Cash, Cash Equivalents and Restricted Cash	18,852	(6,692)
Cash, Cash Equivalents and Restricted Cash, beginning of year	17,080	23,772
Cash, Cash Equivalents and Restricted Cash, end of year	$ 35,932	$ 17,080
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 2,489	$ 5,650
Cash (received) paid for income taxes	$ (84)	$ 4,308
Supplemental disclosure of non-cash investing and financing activities:		
Acquisition of property, plant and equipment under finance lease	$ 158	$ —
Dividends payable	$ 32	$ 284

(1) See complete Consolidated Financial Statements and Notes related thereto within the Annual Report on Form 10-K for the period ended December 31, 2020.

Appendix E: Non-GAAP Financial Measure

Note on Non-GAAP Financial Measure

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 and 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 gain on settlement and increased by cash distributions from equity method investments, impairment of long-lived assets and amortization of upfront customer consideration that was recorded as a component of the Marshall Mine Acquisition (“Upfront Customer Consideration”). Because Consolidated Adjusted EBITDA, the Company believes that the measure is less susceptible to variances that affect the Company's operating performance.

As used by the Company, Segment Adjusted EBITDA is calculated as the “Segment EBITDA” for the Company’s respective segment and then further adjusted for each segment as described below. 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 and as further adjusted. In the case of the RC segment, that segment’s Segment EBITDA is reduced by the non-cash impact of equity earnings from equity method investments and increased by cash distributions from equity method investments. In the case of the APT segment, that segment’s Segment EBITDA is increased by the non-cash impact of impairment and amortization of Upfront Customer Consideration and reduced by the non-cash impact of gain on settlement.

When used in conjunction with GAAP financial measures, Segment Adjusted EBITDA is a supplemental measure of operating performance that management believes is a useful measure related the Company's respective segments’ performance and the 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 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 and Segment Adjusted EBITDA as factors in evaluating the performance of its business.

The adjustments to Consolidated Adjusted EBITDA and Segment Adjusted EBITDA in future periods are generally expected to be similar. Consolidated Adjusted EBITDA and Segment Adjusted 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: Consolidated EBITDA Reconciliation to Net Income

(in thousands)	Three Months Ended December 31, 2020	Three Months Ended December 31, 2019	Year ended December 31, 2020	Year ended December 31, 2019
Net income (loss) (1)	$ 430	$ 9,098	$ (20,302)	$ 35,537
Depreciation, amortization, depletion and accretion	2,730	2,469	8,537	7,371
Interest expense, net	819	1,294	3,793	6,913
Income tax expense (benefit)	5,196	(2,929)	6,511	11,999
Consolidated EBITDA (loss)	9,175	9,932	(1,461)	61,820
Cash distributions from equity method investees	20,213	17,082	62,441	73,888
Equity earnings	(5,019)	(12,125)	(30,978)	(69,176)
Impairment	—	—	26,103	—
Gain on settlement	(1,129)	—	(1,129)	—
Amortization of Upfront Customer Consideration	158	—	158	—
Consolidated Adjusted EBITDA	$ 23,398	$ 14,889	$ 55,134	$ 66,532

(1) Net income for the year ended December 31, 2019 was inclusive of a $5.0 million adjustment, which increased cost of revenue due to a step-up in basis of inventory acquired related to the Carbon Solutions Acquisition.

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

	Three Months Ended December 31,		Year ended December 31,	
(in thousands)	2020	2019	2020	2019
RC Segment operating income	$ 8,235	$ 15,334	$ 42,689	$ 83,471
Depreciation, amortization, depletion and accretion	32	28	116	83
Interest expense	77	157	331	1,039
RC Segment EBITDA	8,344	15,519	43,136	84,593
Cash distributions from equity method investees	20,213	17,082	62,441	73,888
Equity earnings	(5,019)	(12,125)	(30,978)	(69,176)
RC Segment Adjusted EBITDA	$ 23,538	$ 20,476	$ 74,599	$ 89,305

Appendix H: APT Segment Adjusted EBITDA Reconciliation to Segment Operating Loss

	Three Months Ended December 31,		Year ended December 31,	
(in thousands)	2020	2019	2020	2019
APT Segment operating income (loss) (1)	$ 691	$ (3,890)	$ (39,958)	$ (13,600)
Depreciation, amortization, depletion and accretion	2,484	2,375	7,870	7,206
Interest expense, net	128	97	402	368
APT Segment EBITDA (loss)	3,303	(1,418)	(31,686)	(6,026)
Impairment	—	—	26,103	—
Gain on settlement	(1,129)	—	(1,129)	—
Amortization of Upfront Customer Consideration	$ 158	$ —	$ 158	$ —
APT Segment Adjusted EBITDA (loss)	$ 2,332	$ (1,418)	$ (6,554)	$ (6,026)

(1) Segment operating loss for the year ended December 31, 2019 was inclusive of a $5.0 million adjustment, which increased cost of revenue due to a step-up in basis of inventory acquired related to the Carbon Solutions Acquisition. Exclusive of this impact during the year ended December 31, 2019, Segment EBITDA loss would have been $1.0 million.