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

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June 30, 2021

OR ☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to
Commission File Number: 001-38221

ECOVYST INC.

Delaware	**81-3406833**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
300 Lindenwood Drive Malvern, Pennsylvania	**19355**
(Address of principal executive offices)	(Zip Code)

(610) 651-4400
(Registrant's telephone number, including area code)

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

Title of each class	Trading symbol	Name of each exchange on which registered
Common stock, par value $0.01 per share	ECVT	New York Stock Exchange

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 outstanding as of August 4, 2021 was 136,944,255.

ECOVYST INC.

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June 30, 2021

PART I—FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS (UNAUDITED)

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF INCOME
(in thousands, except share and per share amounts)
(unaudited)

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Sales	$ 146,952	$ 115,641	$ 273,576	$ 241,195
Cost of goods sold	108,479	80,768	204,984	168,618
Gross profit	38,473	34,873	68,592	72,577
Selling, general and administrative expenses	21,856	20,585	43,986	42,865
Other operating expense, net	4,965	4,442	10,472	7,892
Operating income	11,652	9,846	14,134	21,820
Equity in net (income) from affiliated companies	(6,755)	(11,468)	(11,965)	(19,763)
Interest expense, net	8,741	15,136	19,197	30,434
Debt extinguishment costs	11,717	—	11,717	2,513
Other (income) expense, net	(1,875)	(3,509)	3,299	3,961
(Loss) income from continuing operations before income taxes and noncontrolling interest	(176)	9,687	(8,114)	4,675
Provision (benefit) for income taxes	7,694	(24,630)	2,504	(26,295)
Net (loss) income from continuing operations	(7,870)	34,317	(10,618)	30,970
Net income (loss) from discontinued operations, net of tax	6,520	(18,070)	(83,250)	(14,214)
Net (loss) income	(1,350)	16,247	(93,868)	16,756
Less: Net income attributable to the noncontrolling interest - discontinued operations	140	321	257	606
Net (loss) income attributable to Ecovyst Inc.	$ (1,490)	$ 15,926	$ (94,125)	$ 16,150
(Loss) income from continuing operations attributable to Ecovyst Inc.	$ (7,870)	$ 34,317	$ (10,618)	$ 30,970
Income (loss) from discontinued operations attributable to Ecovyst Inc.	6,380	(18,391)	(83,507)	(14,820)
Net (loss) income attributable to Ecovyst Inc.	$ (1,490)	$ 15,926	$ (94,125)	$ 16,150
Net income (loss) per share:				
Basic (loss) income per share - continuing operations	$ (0.06)	$ 0.25	$ (0.08)	$ 0.23
Diluted (loss) income per share - continuing operations	$ (0.06)	$ 0.25	$ (0.08)	$ 0.23
Basic income (loss) per share - discontinued operations	$ 0.05	$ (0.14)	$ (0.61)	$ (0.11)
Diluted income (loss) per share - discontinued operations	$ 0.05	$ (0.14)	$ (0.61)	$ (0.11)
Basic (loss) income per share	$ (0.01)	$ 0.12	$ (0.69)	$ 0.12
Diluted (loss) income per share	$ (0.01)	$ 0.12	$ (0.69)	$ 0.12
Weighted average shares outstanding:				
Basic	136,095,060	135,083,126	136,072,165	135,278,764
Diluted	136,095,060	135,671,830	136,072,165	136,079,540

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)
(unaudited)

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Net (loss) income	$ (1,350)	$ 16,247	$ (93,868)	$ 16,756
Other comprehensive income (loss), net of tax:				
Pension and postretirement benefits	(42)	(13)	(85)	(28)
Net gain (loss) from hedging activities	413	495	1,178	(34)
Foreign currency translation	12,163	11,939	8,302	(34,416)
Total other comprehensive income (loss)	12,534	12,421	9,395	(34,478)
Comprehensive income (loss)	11,184	28,668	(84,473)	(17,722)
Less: Comprehensive income (loss) attributable to noncontrolling interests	593	697	316	(2,506)
Comprehensive income (loss) attributable to Ecovyst Inc.	$ 10,591	$ 27,971	$ (84,789)	$ (15,216)

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share amounts)
(unaudited)

	June 30, 2021	December 31, 2020
ASSETS		
Cash and cash equivalents	$ 55,757	$ 114,011
Accounts receivable, net	66,050	46,183
Inventories, net	47,952	52,789
Prepaid and other current assets	18,356	11,677
Current assets held for sale	199,213	204,007
Total current assets	387,328	428,667
Investments in affiliated companies	457,989	458,128
Property, plant and equipment, net	595,023	591,710
Goodwill	429,705	391,565
Other intangible assets, net	131,812	137,446
Right-of-use lease assets	30,843	28,943
Other long-term assets	19,405	12,445
Long-term assets held for sale	1,035,493	1,149,443
Total assets	$ 3,087,598	$ 3,198,347
LIABILITIES		
Current maturities of long-term debt	$ 9,000	$ —
Accounts payable	43,441	38,106
Operating lease liabilities—current	7,536	6,715
Accrued liabilities	45,704	45,475
Current liabilities held for sale	94,336	111,569
Total current liabilities	200,017	201,865
Long-term debt, excluding current portion	1,395,887	1,400,369
Deferred income taxes	122,643	125,668
Operating lease liabilities—noncurrent	23,204	21,972
Other long-term liabilities	14,123	15,744
Long-term liabilities held for sale	127,115	155,550
Total liabilities	1,882,989	1,921,168
Commitments and contingencies (Note 17)		
EQUITY		
Common stock ($0.01 par); authorized shares 450,000,000; issued shares 137,828,218 and 137,102,143 on June 30, 2021 and December 31, 2020, respectively; outstanding shares 136,946,005 and 136,318,557 on June 30, 2021 and December 31, 2020, respectively	1,378	1,371
Preferred stock ($0.01 par); authorized shares 50,000,000; no shares issued or outstanding on June 30, 2021 and December 31, 2020	—	—
Additional paid-in capital	1,492,334	1,477,859
Accumulated deficit	(269,883)	(175,758)
Treasury stock, at cost; shares 882,213 and 783,586 on June 30, 2021 and December 31, 2020, respectively	(12,551)	(11,081)
Accumulated other comprehensive loss	(5,929)	(15,265)
Total Ecovyst Inc. equity	1,205,349	1,277,126
Noncontrolling interest	(740)	53
Total equity	1,204,609	1,277,179
Total liabilities and equity	$ 3,087,598	$ 3,198,347

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)
(unaudited)

	Common stock	Additional paid-in capital	(Accumulated deficit)	Treasury stock, at cost	Accumulated other comprehensive income (loss)	Non-controlling interest	Total
Balance, December 31, 2020	$ 1,371	$ 1,477,859	$ (175,758)	$ (11,081)	$ (15,265)	$ 53	$ 1,277,179
Net (loss) income	—	—	(92,635)	—	—	117	(92,518)
Other comprehensive loss	—	—	—	—	(2,745)	(394)	(3,139)
Tax withholdings on equity award vesting	—	—	—	(1,470)	—	—	(1,470)
Distributions to noncontrolling interests	—	—	—	—	—	(516)	(516)
Stock compensation expense	—	6,877	—	—	—	—	6,877
Shares issued under equity incentive plan, net of forfeitures	7	63	—	—	—	—	70
Balance, March 31, 2021	$ 1,378	$ 1,484,799	$ (268,393)	$ (12,551)	$ (18,010)	$ (740)	$ 1,186,483
Net income	—	—	(1,490)	—	—	140	(1,350)
Other comprehensive income	—	—	—	—	12,081	453	12,534
Distributions to noncontrolling interests	—	—	—	—	—	(593)	(593)
Stock compensation expense	—	7,499	—	—	—	—	7,499
Shares issued under equity incentive plan, net of forfeitures	—	36	—	—	—	—	36
Balance, June 30, 2021	$ 1,378	$ 1,492,334	$ (269,883)	$ (12,551)	$ (5,929)	$ (740)	$ 1,204,609

	Common stock	Additional paid-in capital	Retained earnings	Treasury stock, at cost	Accumulated other comprehensive income (loss)	Non-controlling interest	Total
Balance, December 31, 2019	$ 1,369	$ 1,696,899	$ 103,013	$ (6,483)	$ (15,348)	$ 5,868	$ 1,785,318
Net income	—	—	224	—	—	285	509
Other comprehensive loss	—	—	—	—	(43,411)	(3,488)	(46,899)
Repurchases of common shares	—	—	—	(2,059)	—	—	(2,059)
Tax withholdings on equity award vesting	—	—	—	(1,830)	—	—	(1,830)
Stock compensation expense	—	5,920	—	—	—	—	5,920
Shares issued under equity incentive plan, net of forfeitures	4	177	—	—	—	—	181
Balance, March 31, 2020	$ 1,373	$ 1,702,996	$ 103,237	$ (10,372)	$ (58,759)	$ 2,665	$ 1,741,140
Net income	—	—	15,926	—	—	321	16,247
Other comprehensive income	—	—	—	—	12,045	376	12,421
Stock compensation expense	—	6,366	—	—	—	—	6,366
Shares issued under equity incentive plan, net of forfeitures	(5)	5	—	—	—	—	—
Balance, June 30, 2020	$ 1,368	$ 1,709,367	$ 119,163	$ (10,372)	$ (46,714)	$ 3,362	$ 1,776,174

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Six months ended June 30, 2021	Six months ended June 30, 2020
Cash flows from operating activities:		
Net (loss) income	$ (93,868)	$ 16,756
Net loss from discontinued operations	83,250	14,214
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	33,533	31,635
Amortization	5,952	5,786
Amortization of deferred financing costs and original issue discount	730	1,377
Debt extinguishment costs	5,981	—
Foreign currency exchange loss	3,882	3,709
Pension and postretirement healthcare (benefit) expense	(1,190)	217
Pension and postretirement healthcare funding	—	(913)
Deferred income tax provision	4,279	248
Net loss on asset disposals	2,379	602
Stock compensation	12,644	8,969
Equity in net income from affiliated companies	(11,965)	(19,763)
Dividends received from affiliated companies	10,000	15,000
Other, net	(3,270)	305
Working capital changes that provided (used) cash, excluding the effect of acquisitions and dispositions:		
Receivables	(18,376)	(961)
Inventories	5,501	(1,681)
Prepaids and other current assets	(1,756)	(49)
Accounts payable	2,619	(5,122)
Accrued liabilities	(3,104)	(46,026)
Net cash provided by operating activities, continuing operations	37,221	24,303
Net cash provided by operating activities, discontinued operations	12,077	37,806
Net cash provided by operating activities	49,298	62,109
Cash flows from investing activities:		
Purchases of property, plant and equipment	(28,039)	(22,233)
Business combinations, net of cash acquired	(41,994)	—
Proceeds from sale of assets	—	2,375
Other, net	—	(4)
Net cash used in investing activities, continuing operations	(70,033)	(19,862)
Net cash used in investing activities, discontinued operations	(32,010)	(16,360)
Net cash used in investing activities	(102,043)	(36,222)

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	Six months ended June 30,	
	2021	2020
Cash flows from financing activities:		
Draw down of revolving credit facilities	—	140,626
Repayments of revolving credit facilities	—	(140,626)
Issuance of long-term debt, net of discount	897,750	—
Debt issuance costs	(1,293)	(3,023)
Repayments of long-term debt	(900,000)	—
Repurchases of common shares	—	(2,059)
Tax withholdings on equity award vesting	(1,470)	(1,830)
Other, net	6	181
Net cash used in financing activities, continuing operations	(5,007)	(6,731)
Net cash (used in) provided by financing activities, discontinued operations	(1,117)	776
Net cash used in financing activities	(6,124)	(5,955)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(3,339)	(3,261)
Net change in cash, cash equivalents and restricted cash	(62,208)	16,671
Cash, cash equivalents and restricted cash at beginning of period	137,219	73,917
Cash, cash equivalents and restricted cash at end of period	$ 75,011	$ 90,588
Less: cash, cash equivalents, and restricted cash of discontinued operations	(17,603)	(51,442)
Cash, cash equivalents and restricted cash at end of period of continuing operations	$ 57,408	$ 39,146

For supplemental cash flow disclosures, see Note 21.

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Dollars in thousands, except share and per share amounts)
(unaudited)

1. Background and Basis of Presentation:

Description of Business

Ecovyst Inc. and subsidiaries (the “Company” or “Ecovyst”), formerly known as PQ Group Holdings Inc. and subsidiaries (“PQ Group Holdings”), is a leading integrated and innovative global provider of specialty catalysts and services. The Company supports customers globally through its strategically located network of manufacturing facilities. The Company believes that its products, which are predominantly inorganic, and services contribute to improving the sustainability of the environment.

On December 14, 2020, PQ Group Holdings completed the sale of its Performance Materials business for $650,000, and the results of operations of this business have been presented as discontinued operations in the condensed consolidated financial statements for all periods presented. See Note 3 for more information on the transaction.

Effective on August 1, 2021, PQ Group Holdings completed the sale of its Performance Chemicals business for $1,100,000, subject to certain purchase price adjustments as set forth in the agreement. Upon entering into the definitive agreement, the transaction met the held for sale criteria and consequently the financial results of the Performance Chemicals business are reported in discontinued operations in the condensed consolidated financial statements for all periods presented. See Note 3 for more information on the transaction.

In connection with the closing of the sale of the Performance Chemicals business, PQ Group Holdings Inc. changed its name from “PQ Group Holdings Inc.” to “Ecovyst Inc.”, changed the ticker symbol of its common stock listed on the New York Stock Exchange from “PQG” to “ECVT” and rebranded PQ Group Holdings segments from “Refining Services” to “Ecoservices” and “Catalysts” to “Catalyst Technologies”.

The Company has two uniquely positioned specialty businesses: Ecoservices provides sulfuric acid recycling to the North American refining industry for the production of alkylate and provides on-purpose virgin sulfuric acid for water treatment, mining, and industrial applications; and Catalyst Technologies provides finished silica catalysts and catalyst supports necessary to produce high strength and high stiffness plastics and, through its Zeolyst joint venture, supplies zeolites used for catalysts that remove nitric oxide from diesel engine emissions as well as sulfur from fuels during the refining process.

The Company’s regeneration services product group, which is a part of the Company’s Ecoservices segment, typically experiences seasonal fluctuations as a result of higher demand for gasoline products in the summer months and lower demand in the winter months. These demand fluctuations result in higher sales and working capital requirements in the second and third quarters.

The notes to the condensed consolidated financial statements, unless otherwise indicated, are on a continuing operations basis.

Basis of Presentation

The condensed consolidated financial statements included herein are unaudited. Certain information and footnote disclosures normally included in annual financial statements prepared in accordance with accounting principles generally accepted in the United States (“GAAP”) have been condensed or omitted pursuant to such rules and regulations for interim reporting. In the opinion of management, all adjustments of a normal and recurring nature necessary to state fairly the financial position and results of operations have been included. The results of operations are not necessarily indicative of the expected results for the full year. The accompanying unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and related notes included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2020.

2. New Accounting Standards:

Recently Adopted Accounting Standards

In December 2019, the Financial Accounting Standards Board (“FASB”) issued new guidance to reduce the complexity in accounting for income taxes by removing certain exceptions to the general principles and simplifying areas such as franchise taxes, step-up in tax basis goodwill, separate entity financial statements and interim recognition of enactment of tax laws or rate changes. The new guidance is effective for fiscal years beginning after December 15, 2020 and interim periods within those fiscal years. The Company adopted the new guidance effective January 1, 2021, with no material impact to the Company’s condensed consolidated financial position, results of operations or cash flows.

(Dollars in thousands, except share and per share amounts)

Accounting Standards Not Yet Adopted

In March 2020, the FASB issued guidance to address certain accounting consequences from the anticipated transition from the use of the London Interbank Offered Rate ("LIBOR") and other interbank offered rates to alternative reference rates. The new guidance contains practical expedients for reference rate reform related activities that impact debt, leases, derivatives and other contracts. The guidance is optional and may be elected over time as reference rate reform activities occur. The Company elected to apply the hedge accounting expedients related to probability and the assessments of effectiveness for future LIBOR-indexed cash flows to assume that the index upon which future hedged transactions will be based matches the index of the corresponding derivatives. Application of these expedients preserves the presentation of derivatives consistent with past presentation. The Company continues to evaluate the impact of the guidance and may apply other elections as applicable as additional changes in the market occur.

3. Divestitures:

Performance Materials Divestiture

On December 14, 2020, the Company completed the sale of its Performance Materials business for $650,000. In the fourth quarter of 2020, the Performance Materials business met the criteria set forth in Accounting Standards Codification 205-20, Presentation of Financial Statements - Discontinued Operations ("ASC 205-20"), as the sale represented a strategic shift that had a major effect on the Company's operations and financial results. As a result, the Company's condensed consolidated financial statements for the three and six months ended June 30, 2020 reflect the Performance Materials business as a discontinued operation. The divested business historically represented a reportable segment of the Company, including certain Australian operations that were historically reported in the Performance Chemicals reportable segment.

The following table summarizes the results of discontinued operations related to the Performance Materials divestiture:

	Three Months Ended June 30, 2020	Six Months Ended June 30, 2020
Sales	$ 105,995	$ 173,886
Cost of goods sold	76,818	128,405
Selling, general and administrative expenses	8,342	17,627
Other operating (income) expense, net	(168)	12,706
Operating income	21,003	15,148
Interest expense, net [1]	3,784	8,916
Other expense, net	1,077	165
Income from discontinued operations before income tax	16,142	6,067
Provision for income taxes	7,790	3,505
Income from discontinued operations, net of tax	$ 8,352	$ 2,562

(1) The closing of the transaction triggered the Company's obligation to provide partial repayment under its Amended and Restated Term Loan Credit Agreement, dated May 4, 2016 and its New Term Loan Credit Agreement, dated as of July 22, 2020. As such, interest expense has been allocated to discontinued operations on the basis of the Company's mandatory repayment of $275,787 of the Senior Secured Term Loan Facility due February 2027 and its mandatory repayment of $188,722 of the new Senior Secured Term Loan Facility due February 2027.

During the three months ended June 30, 2021, the Company incurred transaction costs of $84 and stock-based compensation expense of $630, and an associated tax benefit of $192 related to the Performance Materials divestiture which is included in loss from discontinued operations, net of tax. During the six months ended June 30, 2021, the Company incurred transaction costs of $1,530 and stock-based compensation expense of $1,283, and an associated tax benefit of $706 related to the Performance Materials divestiture which is included in loss from discontinued operations, net of tax.

Net income attributable to the noncontrolling interest related to the Performance Materials business, net of tax was $71 and $122 for the three and six months ended June 30, 2020. Net income attributable to Ecovyst Inc., related to the Performance Materials business, net of tax was $8,281 and $2,440 for the three and six months ended June 30, 2020.

ECOVYST INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Dollars in thousands, except share and per share amounts)
(unaudited)

Upon the close of the transaction, the Company entered into a Transition Services Agreement with the buyer pursuant to which the buyer is receiving certain services to provide for the orderly transition of various functions and processes after the closing of the transaction. The services under the Transition Services Agreement include information technology, accounting, tax, financial services, human resources, facilities, and other administrative support services. These services are provided for a period of nine months, with three 30-day extensions available. The Company billed $1,401 and $3,061 under the Transition Services Agreement to the buyer during the three and six months ended June 30, 2021, respectively. Those billings are included in selling, general and administrative expenses on the condensed consolidated financial statements for the three and six months ended June 30, 2021.

Performance Chemicals Divestiture

On February 28, 2021, the Company entered into a definitive agreement to sell its Performance Chemicals business to Sparta Aggregator L.P., a partnership established by Koch Minerals & Trading, LLC and Cerberus Capital Management, L.P., for $1,100,000, subject to certain adjustments including indebtedness, cash, working capital and transaction expenses. The Company completed the sale of the Performance Chemicals business effective on August 1, 2021.

In the first quarter of 2021, the Performance Chemicals business met the discontinued operations criteria set forth in ASC 205-20, as the sale represents a strategic shift that will have a major effect on the Company's operations and financial results. As a result, the Company's condensed consolidated financial statements for all periods presented reflect the Performance Chemicals business as a discontinued operation. The Performance Chemicals business historically represented a reportable segment of the Company.

The disposal group was tested for recoverability as of each of the balance sheet dates since meeting the discontinued operations criteria, and the Company recognized an expected disposal loss of approximately $13,990 and $109,584 during the three and six months ended June 30, 2021. The expected disposal loss is included in net loss from discontinued operations, net of tax on the condensed consolidated statements of income. In the condensed consolidated balance sheet as of June 30, 2021, the Company recorded the disposal loss to goodwill and a valuation allowance of approximately $75,080 and $34,504, respectively, included in long-term assets held for sale. Completion of the sale may be for amounts that could vary from the current estimate. The Company's estimate of fair value will be evaluated and recognized each reporting period until the divestiture is complete.

ECOVYST INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Dollars in thousands, except share and per share amounts)
(unaudited)

The following table summarizes the results of discontinued operations related to Performance Chemicals for the periods presented:

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Sales	$ 170,374	$ 140,034	$ 334,897	$ 311,218
Cost of goods sold	118,785	111,245	244,638	247,838
Selling, general and administrative expenses	11,490	9,998	23,206	21,731
Other operating expense, net	11,850	8,462	29,330	14,079
Impairment of assets held for sale	13,990	—	109,584	—
Operating income (loss)	14,259	10,329	(71,861)	27,570
Equity in net (income) from affiliated companies	(48)	(24)	(86)	(79)
Interest expense, net [(1)]	5,599	3,353	8,814	7,380
Other (income) expense, net	(840)	320	(6,363)	(3,434)
Income (loss) income from discontinued operations before income tax	9,548	6,680	(74,226)	23,703
Provision for income taxes	2,507	33,102	6,918	40,479
Income (loss) income from discontinued operations, net of tax	$ 7,041	$ (26,422)	$ (81,144)	$ (16,776)

(1) Upon the close of the transaction, the Company used a portion of the net proceeds to repay a portion of its outstanding debt amounting to $526,363. Prior to the Company's debt refinancing in June 2021, the Company's outstanding term loan facilities had mandatory repayment provisions. As a result, interest expense has been allocated to discontinued operations on the basis of the Company's total repayment of $526,363.

Net income attributable to the noncontrolling interest related to the Performance Chemicals business, net of tax was $140 and $250 for the three months ended June 30, 2021 and 2020, respectively. Net income (loss) income attributable to Ecovyst Inc., related to the Performance Chemicals business, net of tax was $6,901 and $(26,672) for the three months ended June 30, 2021 and 2020, respectively.

Net income attributable to the noncontrolling interest related to the Performance Chemicals business, net of tax was $257 and $485 for the six months ended June 30, 2021 and 2020, respectively. Net (loss) income attributable to Ecovyst Inc., related to the Performance Chemicals business, net of tax was $(81,401) and $(17,261) for the six months ended June 30, 2021 and 2020, respectively.

ECOVYST INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Dollars in thousands, except share and per share amounts)
(unaudited)

The following table summarizes the assets and liabilities of discontinued operations related to the Performance Chemicals divestiture as of June 30, 2021 and December 31, 2020.

	June 30, 2021	December 31, 2020
ASSETS		
Cash and cash equivalents	$ 17,603	$ 21,520
Accounts receivables, net	93,413	86,961
Inventories, net	69,697	74,647
Prepaid and other current assets	18,500	20,879
Current assets held for sale	$ 199,213	$ 204,007
Investments in affiliated companies	$ 261	$ 324
Property, plant and equipment, net	394,461	391,524
Goodwill	250,626	326,173
Other intangible assets, net	383,842	388,857
Right-of-use lease assets	20,823	19,296
Other long-term assets	19,984	23,269
Valuation allowance	(34,504)	—
Long-term assets held for sale	$ 1,035,493	$ 1,149,443
LIABILITIES		
Accounts payable	$ 65,749	$ 74,754
Operating lease liabilities—current	6,544	8,479
Accrued liabilities	22,043	28,336
Current liabilities held for sale	$ 94,336	$ 111,569
Deferred income taxes	$ 60,109	$ 50,232
Operating lease liabilities—noncurrent	10,308	10,047
Other long-term liabilities	56,698	95,271
Long-term liabilities held for sale	$ 127,115	$ 155,550

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4. Revenue from Contracts with Customers:

Disaggregated Revenue

The Company's primary means of disaggregating revenues is by reportable segments, which can be found in Note 18 to these condensed consolidated financial statements.

The Company's portfolio of products is integrated into a variety of end uses, which are described in the table below.

Key End Uses	Key Products
Industrial & process chemicals	• Sulfur derivatives for industrial production
	• Treatment services
Fuels & emission control	• Refining catalysts
	• Emission control catalysts
	• Catalyst recycling services
Packaging & engineered plastics	• Catalysts for high-density polyethylene and chemicals syntheses
	• Antiblock for film packaging
	• Sulfur derivatives for nylon production
Natural resources	• Sulfur derivatives for mining

The following tables disaggregate the Company's sales, by segment and end use, for the three and six months ended June 30, 2021 and 2020:

	Three months ended June 30, 2021		
	Ecoservices	Silica Catalysts	Total
Industrial & process chemicals	$ 18,341	$ —	$ 18,341
Fuels & emission control[1]	68,794	—	68,794
Packaging & engineered plastics	14,979	26,215	41,194
Natural resources	18,627	—	18,627
Total segment sales	$ 120,741	$ 26,215	$ 146,956
Eliminations	(4)	—	(4)
Total	$ 120,737	$ 26,215	$ 146,952

	Three months ended June 30, 2020		
	Ecoservices	Silica Catalysts	Total
Industrial & process chemicals	$ 16,713	$ 2	$ 16,715
Fuels & emission control[1]	50,682	—	50,682
Packaging & engineered plastics	7,473	25,206	32,679
Natural resources	15,565	—	15,565
Total segment sales	$ 90,433	$ 25,208	$ 115,641

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	Six months ended June 30, 2021		
	Ecoservices	Silica Catalysts	Total
Industrial & process chemicals	$ 35,288	$ —	$ 35,288
Fuels & emission control[1]	123,987	—	123,987
Packaging & engineered plastics	25,600	52,617	78,217
Natural resources	36,088	—	36,088
Total segment sales	$ 220,963	$ 52,617	$ 273,580
Eliminations	(4)	—	(4)
Total	$ 220,959	$ 52,617	$ 273,576

	Six months ended June 30, 2020		
	Ecoservices	Silica Catalysts	Total
Industrial & process chemicals	$ 36,072	$ 49	$ 36,121
Fuels & emission control[1]	106,393	—	106,393
Packaging & engineered plastics	18,206	50,023	68,229
Natural resources	30,452	—	30,452
Total segment sales	$ 191,123	$ 50,072	$ 241,195

(1) As described in Note 1, the Company experiences seasonal sales fluctuations to customers in the fuels & emission control end use.

Contract Assets and Liabilities

A contract asset is a right to consideration in exchange for goods that the Company has transferred to a customer when that right is conditional on something other than the passage of time. A contract liability exists when the Company receives consideration in advance of performance obligations being satisfied. The Company has no contract assets or liabilities on its condensed consolidated balance sheets as of June 30, 2021 and December 31, 2020. For the three and six months ended June 30, 2021 and 2020, revenue recognized from performance obligations related to prior periods was not material.

5. Fair Value Measurements:

Fair values are based on quoted market prices when available. When market prices are not available, fair values are generally estimated using discounted cash flow analyses, incorporating current market inputs for similar financial instruments with comparable terms and credit quality. In instances where there is little or no market activity for the same or similar instruments, the Company estimates fair values using methods, models and assumptions that management believes a hypothetical market participant would use to determine a current transaction price. These valuation techniques involve some level of management estimation and judgment that becomes significant with increasingly complex instruments or pricing models. Where appropriate, adjustments are included to reflect the risk inherent in a particular methodology, model or input used.

The Company's financial assets and liabilities carried at fair value have been classified based upon a fair value hierarchy. The hierarchy gives the highest ranking to fair values determined using unadjusted quoted prices in active markets for identical assets and liabilities (Level 1) and the lowest ranking to fair values determined using methodologies and models with unobservable inputs (Level 3). The classification of an asset or a liability is based on the lowest level input that is significant to its measurement. For example, a Level 3 fair value measurement may include inputs that are both observable (Levels 1 and 2) and unobservable (Level 3). The levels of the fair value hierarchy are as follows:

- Level 1—Values are unadjusted quoted prices for identical assets and liabilities in active markets accessible at the measurement date. Active markets provide pricing data for trades occurring at least weekly and include exchanges and dealer markets.

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- Level 2—Inputs include quoted prices for similar assets or liabilities in active markets, quoted prices from those willing to trade in markets that are not active, or other inputs that are observable or can be corroborated by market data for the term of the instrument. Such inputs include market interest rates and volatilities, spreads and yield curves.
- Level 3—Certain inputs are unobservable (supported by little or no market activity) and significant to the fair value measurement. Unobservable inputs reflect the Company's best estimate of what hypothetical market participants would use to determine a transaction price for the asset or liability at the reporting date.

The following table presents information about the Company's assets and liabilities that were measured at fair value on a recurring basis as of June 30, 2021 and December 31, 2020, and indicates the fair value hierarchy of the valuation techniques the Company utilized to determine such fair value.

	June 30, 2021	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Derivative contracts (Note 14)	$ 227	$ —	$ 227	$ —
Liabilities:				
Derivative contracts (Note 14)	$ 2,486	$ —	$ 2,486	$ —

	December 31, 2020	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Liabilities:				
Derivative contracts (Note 14)	$ 3,704	$ —	$ 3,704	$ —

Derivative contracts

Derivative assets and liabilities can be exchange-traded or traded over-the-counter ("OTC"). The Company generally values exchange-traded derivatives using models that calibrate to market transactions and eliminate timing differences between the closing price of the exchange-traded derivatives and their underlying instruments. OTC derivatives are valued using market transactions and other market evidence whenever possible, including market-based inputs to models, model calibration to market transactions, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. When models are used, the selection of a particular model to value an OTC derivative depends on the contractual terms of, and specific risks inherent in, the instrument as well as the availability of pricing information in the market. The Company generally uses similar models to value similar instruments. Valuation models require a variety of inputs, including contractual terms, market prices and rates, forward curves, measures of volatility, and correlations of such inputs. For OTC derivatives that trade in liquid markets, such as forward contracts, swaps and options, model inputs can generally be corroborated by observable market data by correlation or other means, and model selection does not involve significant management judgment.

During the six months ended June 30, 2021, the Company had interest rate caps that were fair valued using Level 2 inputs. In March 2021, the Company settled its cross-currency swaps, which were used as a hedging instrument of its net investment in foreign assets in its Performance Chemicals segment. Refer to Note 14 of these condensed consolidated financial statements for additional information. In addition, the Company applies a credit valuation adjustment to reflect credit risk which is calculated based on credit default swaps. To the extent that the Company's net exposure under a specific master agreement is an asset, the Company utilizes the counterparty's default swap rate. If the net exposure under a specific master agreement is a liability, the Company utilizes a default swap rate comparable to Ecovyst. The credit valuation adjustment is added to the discounted fair value to reflect the exit price that a market participant would be willing to receive to assume the Company's liabilities or that a market participant would be willing to pay for the Company's assets.

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6. Stockholders' Equity:

Accumulated Other Comprehensive Income (Loss)

The following tables present the tax effects of each component of other comprehensive income (loss) for the three and six months ended June 30, 2021 and 2020:

	Three months ended June 30,					
	2021			2020		
	Pre-tax amount	Tax benefit/ (expense)	After-tax amount	Pre-tax amount	Tax benefit/ (expense)	After-tax amount
Defined benefit and other postretirement plans:						
Amortization of net gains	$ 2	$ (1)	$ 1	$ 21	$ (8)	$ 13
Amortization of prior service cost	(58)	15	(43)	(40)	14	(26)
Benefit plans, net	(56)	14	(42)	(19)	6	(13)
Net gain (loss) from hedging activities	551	(138)	413	660	(165)	495
Foreign currency translation[1]	12,163	—	12,163	13,153	(1,214)	11,939
Other comprehensive income (loss)	$ 12,658	$ (124)	$ 12,534	$ 13,794	$ (1,373)	$ 12,421

	Six months ended June 30,					
	2021			2020		
	Pre-tax amount	Tax benefit/ (expense)	After-tax amount	Pre-tax amount	Tax benefit/ (expense)	After-tax amount
Defined benefit and other postretirement plans:						
Amortization of net gains and (losses)	$ 3	$ (1)	$ 2	$ 65	$ (16)	$ 49
Amortization of prior service cost	(116)	29	(87)	(104)	27	(77)
Benefit plans, net	(113)	28	(85)	(39)	11	(28)
Net (loss) gain from hedging activities	1,571	(393)	1,178	(45)	11	(34)
Foreign currency translation[1]	5,855	2,447	8,302	(36,904)	2,488	(34,416)
Other comprehensive income (loss)	$ 7,313	$ 2,082	$ 9,395	$ (36,988)	$ 2,510	$ (34,478)

(1) The income tax benefit or expense included in other comprehensive income is attributed to the portion of foreign currency translation associated with the Company's cross-currency interest rate swaps, for which the tax effect is based on the applicable U.S. deferred income tax rate. See Note 14 to these condensed consolidated financial statements for information regarding the Company's cross-currency interest rate swaps.

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The following table presents the changes in accumulated other comprehensive income (loss), net of tax, by component for the six months ended June 30, 2021 and 2020:

	Defined benefit and other postretirement plans	Net gain (loss) from hedging activities	Foreign currency translation	Total
December 31, 2020	$ 5,278	$ (660)	$ (19,883)	$ (15,265)
Other comprehensive income (loss) before reclassifications	(170)	1,043	8,243	9,116
Amounts reclassified from accumulated other comprehensive income[1]	85	135	—	220
June 30, 2021	$ 5,193	$ 518	$ (11,640)	$ (5,929)
December 31, 2019	$ 3,568	$ (1,838)	$ (17,078)	$ (15,348)
Other comprehensive loss before reclassifications	(1)	(1,091)	(31,304)	(32,396)
Amounts reclassified from accumulated other comprehensive income[1]	(27)	1,057	—	1,030
June 30, 2020	$ 3,540	$ (1,872)	$ (48,382)	$ (46,714)

(1) See the following table for details about these reclassifications. Amounts in parentheses indicate debits.

The following table presents the reclassifications out of accumulated other comprehensive income for the three and six months ended June 30, 2021 and 2020:

Details about Accumulated Other Comprehensive Income Components	Amounts Reclassified from Accumulated Other Comprehensive Income[1]				Affected Line Item where Income is Presented
	Three months ended June 30,		Six months ended June 30,		
	2021	2020	2021	2020	
Amortization of defined benefit and other postretirement items:					
Prior service (cost) credit	$ (58)	$ 58	$ (116)	$ 104	Other income (expense)[2]
Actuarial gains (losses)	2	(34)	3	(68)	Other income (expense)[2]
	(56)	24	(113)	36	Total before tax
	15	(4)	28	(9)	Tax benefit (expense)
	$ (41)	$ 20	$ (85)	$ 27	Net of tax
Gains and losses on cash flow hedges:					
Interest rate caps	$ (70)	$ (398)	$ (179)	$ (629)	Interest expense
Natural gas swaps	—	(402)	—	(775)	Cost of goods sold
	(70)	(800)	(179)	(1,404)	Total before tax
	17	198	44	347	Tax benefit
	$ (53)	$ (602)	$ (135)	$ (1,057)	Net of tax
Total reclassifications for the period	$ (94)	$ (582)	$ (220)	$ (1,030)	Net of tax

(1) Amounts in parentheses indicate debits to profit/loss.

(2) These accumulated other comprehensive income (loss) components are components of net periodic pension and other postretirement cost (see Note 16 to these condensed consolidated financial statements for additional details).

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Treasury Stock Repurchases

Stock Repurchase Program

The Company records repurchases of its common stock for treasury at cost. Upon the reissuance of the Company's common stock from treasury, differences between the proceeds from reissuance and the average cost of the treasury stock are credited or charged to capital in excess of par value to the extent of prior credits related to the reissuance of treasury stock. If no such credits exist, the differences are charged to retained earnings.

On March 12, 2020, the Company's Board of Directors (the "Board") approved a plan to purchase up to $50,000 of Ecovyst Inc. common stock under a stock repurchase program approved by the Company's Board. The Company may repurchase shares from time to time for cash in open market transactions or in privately negotiated transactions in accordance with applicable federal securities laws. The Company will determine the timing and the amount of any repurchases based on its evaluation of market conditions, share price and other factors. The stock repurchase program is valid until March 2022.

During the three months ended March 31, 2020, the Company repurchased 211,700 shares on the open market at an average price of $9.73, for a total of $2,059. The Company has not made any additional repurchases under the program through June 30, 2021. As of June 30, 2021, $47,941 was available for additional share repurchases under the program.

Tax Withholdings on Equity Award Vesting

In connection with the vesting of restricted stock awards, restricted stock units and performance stock units, shares of common stock may be delivered to the Company by employees to satisfy withholding tax obligations at the instruction of the employee award holders. These transactions when they occur are accounted for as stock repurchases by the Company, with the shares returned to treasury stock at a cost representing the payment by the Company of the tax obligations on behalf of the employees in lieu of shares for the vesting unit. The fair value of the shares withheld to cover tax payments were $1,470 and $1,830 for the six months ended June 30, 2021 and 2020, respectively.

7. Acquisition:

On March 1, 2021 (the "Closing Date"), the Company completed the acquisition of Chem32, LLC ("Chem32") as part of a stock transaction (the "Acquisition") for $44,000 in cash. The net cash paid on the closing date by the Company was $41,994, after certain customary adjustments for indebtedness, working capital, cash and a holdback amount pursuant to the agreement. Based in Orange, Texas, Chem32 is a leader in ex situ pre-sulfiding and pre-activation for hydro-processing catalysts.

The Acquisition was accounted for using the acquisition method of accounting. Under the acquisition method, the purchase price was allocated to the identifiable net assets acquired based on the fair values of the identifiable assets acquired and liabilities assumed as of the Closing Date. The excess of the purchase price over fair values of the identifiable net assets acquired was recorded to goodwill.

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The following table sets forth the calculation and preliminary allocation of the purchase price to the identifiable net assets acquired with respect to the Acquisition:

	Provisional Purchase Price Allocation
Cash paid, net of cash acquired	$ 41,994
Holdback	2,000
Total consideration, net of cash acquired	$ 43,994
Recognized amounts of identifiable assets acquired and liabilities assumed:	
Receivables	$ 1,368
Inventories	204
Prepaid and other current assets	351
Property, plant and equipment	5,046
Other long-term assets	38
Fair value of assets acquired	7,007
Accounts payable	207
Accrued liabilities	452
Fair value of net identifiable assets acquired	6,348
Goodwill	37,646
	$ 43,994

The valuation of the identifiable assets and liabilities included in the table above is preliminary and is subject to change, as the Company is in the process of evaluating the information required to determine the fair values of certain identifiable assets and liabilities acquired, including inventory, property, plant and equipment and intangible assets. An increased portion of the purchase price allocated to the identifiable net assets acquired will reduce the amount recognized for goodwill and may result in increased cost of goods sold, depreciation and/or amortization expense. Adjustments to the provisional amounts during the measurement period that result in changes to depreciation, amortization or other income effects will be recognized in the reporting period(s) in which the adjustments are determined.

The Company's condensed consolidated financial statements include Chem32's results of operations from the Closing Date through June 30, 2021. Net sales and net income attributable to Chem32 during this period are included in the Company's condensed consolidated statement of income and are immaterial for the periods presented. Pro forma financial information has not been presented as it is immaterial for the three and six months ended June 30, 2021 and 2020.

The Company believes that the Acquisition will enable it to offer a more robust portfolio of services within the refining industry leveraging our existing relationships, which contributed to a total purchase price that resulted in the recognition of goodwill. The Company assigned all of the goodwill to the Ecoservices segment. The goodwill associated with the Acquisition is deductible for tax purposes.

8. Goodwill:

The change in the carrying amount of goodwill for the six months ended June 30, 2021 is summarized as follows:

	Ecoservices	Catalyst Technologies	Total
Balance as of December 31, 2020	$ 311,892	$ 79,673	$ 391,565
Goodwill recognized (Note 7)	37,646	—	37,646
Foreign exchange impact	—	494	494
Balance as of June 30, 2021	$ 349,538	$ 80,167	$ 429,705

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9. Other Operating Expense, Net:

A summary of other operating expense, net is as follows:

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Amortization expense	$ 2,189	$ 2,166	$ 4,374	$ 4,338
Transaction and other related costs	610	396	1,083	1,197
Restructuring, integration and business optimization costs[1]	71	843	2,330	1,191
Net loss on asset disposals	1,601	440	2,379	602
Other, net	494	597	306	564
	$ 4,965	$ 4,442	$ 10,472	$ 7,892

(1) During the six months ended June 30, 2021, the Company's results were impacted by costs associated with severance charges for certain executives and employees.

10. Inventories, Net:

Inventories, net are classified and valued as follows:

	June 30, 2021	December 31, 2020
Finished products and work in process	$ 41,982	$ 48,500
Raw materials	5,970	4,289
	$ 47,952	$ 52,789
Valued at lower of cost or market:		
LIFO basis	$ 32,404	$ 31,072
Valued at lower of cost and net realizable value:		
FIFO or average cost basis	15,548	21,717
	$ 47,952	$ 52,789

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11. Investments in Affiliated Companies:

The Company accounts for investments in affiliated companies under the equity method. Affiliated companies accounted for on the equity basis as of June 30, 2021 are as follows:

Company	Country	Percent Ownership
Zeolyst International	USA	50%
Zeolyst C.V.	Netherlands	50%

Following is summarized information of the combined investments[1]:

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Sales	$ 76,060	$ 87,360	$ 142,265	$ 157,660
Gross profit	26,121	34,232	48,067	65,096
Operating income	16,987	24,559	31,161	45,420
Net income	16,751	26,237	30,487	46,161

(1) Summarized information of the combined investments is presented at 100%; the Company's share of the net assets and net income of affiliates is calculated based on the percent ownership specified in the table above.

The Company's investments in affiliated companies balance as of June 30, 2021 and December 31, 2020 includes net purchase accounting fair value adjustments of $240,620 and $243,899, respectively, related to the series of transactions consummated on May 4, 2016 to reorganize and combine the businesses of PQ Holdings Inc. and Eco Services Operations LLC, consisting primarily of goodwill and intangible assets such as customer relationships, technical know-how and trade names. Consolidated equity in net income from affiliates is net of $1,620 and $3,278 of amortization expense related to purchase accounting fair value adjustments for the three and six months ended June 30, 2021, respectively. Consolidated equity in net income from affiliates is net of $1,659 and $3,317 of amortization expense related to purchase accounting fair value adjustments for the three and six months ended June 30, 2020, respectively.

12. Property, Plant and Equipment:

A summary of property, plant and equipment, at cost, and related accumulated depreciation is as follows:

	June 30, 2021	December 31, 2020
Land	$ 97,712	$ 93,650
Buildings	77,695	76,010
Machinery and equipment	688,774	656,502
Construction in progress	39,568	42,446
	903,749	868,608
Less: accumulated depreciation	(308,726)	(276,898)
	$ 595,023	$ 591,710

Depreciation expense was $17,529 and $16,340 for the three months ended June 30, 2021 and 2020, respectively. Depreciation expense was $33,533 and $31,635 for the six months ended June 30, 2021 and 2020, respectively.

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13. Long-term Debt:

The summary of long-term debt is as follows:

	June 30, 2021	December 31, 2020
Senior Secured Term Loan Facility due February 2027 (the "2016 Term Loan Facility")	$ 231,363	$ 671,710
Senior Secured Term Loan Facility due February 2027 (the "2020 Term Loan Facility")	—	459,653
Senior Secured Term Loan Facility due June 2028 (the "2021 Term Loan Facility")	900,000	—
5.750% Senior Notes due 2025	295,000	295,000
ABL Facility	—	—
Total debt	1,426,363	1,426,363
Original issue discount	(13,142)	(15,641)
Deferred financing costs	(8,334)	(10,353)
Total debt, net of original issue discount and deferred financing costs	1,404,887	1,400,369
Less: current portion	(9,000)	—
Total long-term debt, excluding current portion	$ 1,395,887	$ 1,400,369

The fair value of a financial instrument is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. As of June 30, 2021 and December 31, 2020, the fair value of the term loan facilities, senior secured and unsecured notes was $1,431,568 and $1,427,123, respectively. The fair value is classified as Level 2 based upon the fair value hierarchy (see Note 5 to these condensed consolidated financial statements for further information on fair value measurements).

2021 Term Loan Facility

In June 2021, PQ Corporation ("PQ Corp"), an indirect, wholly owned subsidiary of Ecovyst prior to the closing of the sale of the Performance Chemicals business, and Ecovyst Catalyst Technologies LLC ("Ecovyst LLC" and, following the closing of the sale of the Performance Chemicals business, the "Borrower"), an indirect, wholly owned subsidiary of the Company, entered into an agreement for a new senior secured term loan facility in an aggregate principal amount of $900,000 with an original issue discount of 0.25% and interest at a floating rate of LIBOR (with a0.5% minimum LIBOR floor) plus 2.75% per annum (or, depending on the Borrower's first lien net leverage ratio,2.5%). The proceeds were used to pay in full the 2020 Term Loan Facility, partially pay the 2016 Term Loan Facility and pay the associated fees and expenses. The new senior secured term loan facility requires scheduled quarterly amortization payments, each equal to 0.25% of the original principal amount of the loans under the new senior secured term loan facility.

As a result of amending the term loan facilities during the three and six months ended June 30, 2021, the Company recorded $5,736 of new creditor and third-party financing costs as debt extinguishment costs. In addition, previous unamortized deferred financing costs of $1,725 and original issue discount of $3,664 associated with the previously outstanding debt were written off as debt extinguishment costs.

ABL Facility

In June 2021, PQ Corp also entered into a third amendment agreement (the "ABL Amendment"), which amended its ABL Credit Agreement, dated as of May 4, 2016 (the "ABL Credit Agreement" and, as amended by the ABL Amendment, the "Amended ABL Credit Agreement"). The ABL Amendment amended the ABL Credit Agreement to, among other things, following the sale of Performance Chemicals, decrease the aggregate amount of revolving loan commitments available to the borrowers thereunder by an aggregate amount of $150,000 to $100,000, consisting of $90,000 in U.S. commitments and $10,000 on in European commitments and extended the maturity date with respect to borrowings under the Amended ABL Credit Agreement to August 2, 2026.

As a result of the ABL Amendment, unamortized deferred financing costs of $592 associated with the ABL Credit Agreement were written off as debt extinguishment costs during the three and six months ended June 30, 2021.

14. Financial Instruments:

The Company uses interest rate related derivative instruments to manage its exposure to changes in interest rates on its variable-rate debt instruments. The Company does not speculate using derivative instruments.

By using derivative financial instruments to hedge exposures to changes in interest rates, the Company exposes itself to credit risk and market risk. Credit risk is the failure of the counterparty to perform under the terms of the derivative contract. When the fair value of a derivative contract is an asset, the counterparty owes the Company, which creates credit risk for the Company. When the fair value of a derivative contract is a liability, the Company owes the counterparty and therefore, the Company is not exposed to the counterparty's credit risk in those circumstances. The Company minimizes counterparty credit risk in derivative instruments by entering into transactions with high quality counterparties. The derivative instruments entered into by the Company do not contain credit-risk-related contingent features.

Market risk is the adverse effect on the value of a derivative instrument that results from a change in interest rates. The market risk associated with the Company's derivative instruments is managed by establishing and monitoring parameters that limit the types and degree of market risk that may be undertaken.

Use of Derivative Financial Instruments to Manage Interest Rate Risk. The Company is exposed to fluctuations in interest rates on its senior secured credit facilities. Changes in interest rates will not affect the market value of such debt but will affect the Company's interest payments over the term of the loans. Likewise, an increase in interest rates could have a material impact on the Company's cash flow. The Company hedges the interest rate fluctuations on debt obligations through interest rate cap agreements. The Company records these agreements at fair value as assets or liabilities in its consolidated balance sheet. As the derivatives are designated and qualify as cash flow hedges, the gains or losses on the interest rate cap agreements are recorded in stockholders' equity as a component of OCI, net of tax. Reclassifications of the gains and losses on the interest rate cap agreements into earnings are recorded as part of interest expense in the condensed consolidated statements of income as the Company makes its interest payments on the hedged portion of its senior secured credit facilities. Fair value is determined based on estimated amounts that would be received or paid to terminate the contracts at the reporting date based on quoted market prices.

In November 2018, the Company entered into interest rate cap agreements to mitigate interest volatility from July 2020 through July 2022, with a cap rate of 3.50% on $500,000 of notional variable-rate debt and a $3,380 premium annuitized during the effective period. In February 2020, the Company restructured its $500,000 of notional variable-rate debt interest rate cap agreements from July 2020 through July 2022, to lower the interest cap rate to 2.50% with an incremental $130 premium annuitized during the effective period. In March 2020, the Company again amended such interest rate cap agreements to lower the cap rate to 0.84% from 2.50% on $500,000 of notional variable-rate debt and paid an additional incremental $900 premium annuitized during the effective period. The term remains unchanged from July 2020 through July 2022. The total cumulative annuitized premium on the $500,000 of notional variable-rate debt is $4,410. The cap rate in effect at June 30, 2021 was 0.84% associated with the $500,000 of notional variable-rate debt.

In July 2020, the Company entered into additional interest rate cap agreements to mitigate interest rate volatility from August 2020 to August 2023, with a cap rate of 1.00% on $400,000 of notional variable-rate debt. The cap rate in effect at June 30, 2021 was 1.00% associated with the $400,000 of notional variable-rate debt.

Use of Derivative Financial Instruments to Manage Foreign Currency Risk. The Company is exposed to risks related to its net investments in foreign operations due to fluctuations in foreign currency exchange rates, particularly between the United States dollar and the Euro. In February 2018, the Company entered into multiple cross-currency interest rate swap arrangements with an aggregate notional amount of €280,000 to hedge this exposure on the net investments of certain of its Euro-denominated subsidiaries in its Performance Materials and Performance Chemicals businesses. The Company recorded these swap agreements at fair value as assets or liabilities in its consolidated balance sheet. As the derivatives are designated and qualify as net investment hedges, changes in the fair value of the swaps attributable to changes in the spot exchange rates are recognized in cumulative translation adjustment ("CTA") within OCI and are held there until the hedged net investments are sold or substantially liquidated. Upon such sale or liquidation, the amount recognized in CTA is reclassified to earnings and reported in the same line item as the gain or loss on the liquidation of the net investments. Changes in the fair value of the swaps attributable to the cross-currency basis spread are excluded from the assessment of hedge effectiveness and are recorded in current period earnings.

In March 2021, as a result of the Performance Materials and Performance Chemicals divestitures, the Company settled its cross-currency swaps. At the date of settlement, the total notional value of the cross-currency swaps was $311,380. The Company paid $13,170 in cash to settle the swaps, which is included in net cash used in investing activities, discontinued operations in the Company's condensed consolidated statement of cash flows for the six months ended June 30, 2021, as the underlying subsidiary subject to the net investment hedging relationship is part of the Performance Chemicals business.

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As of June 30, 2021, an unrealized pre-tax gain of $16,708 is recorded in accumulated other comprehensive income in the Company's condensed consolidated balance sheet. This gain will be reclassified into earnings as part of the gain (loss) on sale upon completion of the Performance Chemicals divestiture.

The fair values of derivative instruments held as of June 30, 2021 and December 31, 2020 are shown below:

	Balance sheet location	June 30, 2021	December 31, 2020
Derivative assets:			
Derivatives designated as cash flow hedges:			
Interest rate caps	Other long-term assets	$ 227	$ —
Total derivative assets		$ 227	$ —
Derivative liabilities:			
Derivatives designated as cash flow hedges:			
Interest rate caps	Accrued liabilities	$ 1,950	$ 1,954
Interest rate caps	Other long-term liabilities	536	1,750
Total derivative liabilities		$ 2,486	$ 3,704

The following tables show the effect of the Company's derivative instruments designated as cash flow hedges on AOCI for the three and six months ended June 30, 2021 and 2020:

		Three months ended June 30,			
		2021		2020	
	Location of gain (loss) reclassified from AOCI into income	Amount of gain (loss) recognized in OCI on derivatives	Amount of gain (loss) reclassified from AOCI into income	Amount of gain (loss) recognized in OCI on derivatives	Amount of gain (loss) reclassified from AOCI into income
Interest rate caps	Interest (expense) income	$ 479	$ (70)	$ (325)	$ (293)

		Six months ended June 30,			
		2021		2020	
	Location of gain (loss) reclassified from AOCI into income	Amount of gain (loss) recognized in OCI on derivatives	Amount of gain (loss) reclassified from AOCI into income	Amount of gain (loss) recognized in OCI on derivatives	Amount of gain (loss) reclassified from AOCI into income
Interest rate caps	Interest (expense) income	$ 1,391	$ (179)	$ (920)	$ (524)

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The following tables show the effect of the Company's cash flow hedge accounting on the condensed consolidated statements of income for the three and six months ended June 30, 2021 and 2020:

	Location and amount of gain (loss) recognized in income on cash flow hedging relationships			
	Three months ended June 30,			
	2021		2020	
	Cost of goods sold	Interest (expense) income	Cost of goods sold	Interest (expense) income
Total amounts of income and expense line items presented in the statement of income in which the effects of cash flow hedges are recorded	$ (108,479)	$ (8,741)	$ (80,768)	$ (15,136)
The effects of cash flow hedging:				
Gain (loss) on cash flow hedging relationships:				
Interest contracts:				
Amount of gain (loss) reclassified from AOCI into income	—	(70)	—	(293)

	Location and amount of gain (loss) recognized in income on cash flow hedging relationships			
	Six months ended June 30,			
	2021		2020	
	Cost of goods sold	Interest (expense) income	Cost of goods sold	Interest (expense) income
Total amounts of income and expense line items presented in the statement of income in which the effects of cash flow hedges are recorded	(204,984)	(19,197)	(168,618)	(30,434)
The effects of cash flow hedging:				
Gain (loss) on cash flow hedging relationships:				
Interest contracts:				
Amount of gain (loss) reclassified from AOCI into income	—	(179)	—	(524)

The amount of unrealized losses in AOCI related to the Company's cash flow hedges that is expected to be reclassified to the condensed consolidated statement of income over the next twelve months is $863 as of June 30, 2021.

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The following tables show the effect of the Company's net investment hedges on AOCI and the condensed consolidated statements of income for the three and six months ended June 30, 2021 and 2020:

	Amount of gain (loss) recognized in OCI on derivative		Location of gain (loss) reclassified from AOCI into income	Amount of gain (loss) reclassified from AOCI into income		Location of gain (loss) recognized in income on derivative (amount excluded from effectiveness testing)	Amount of gain (loss) recognized in income on derivative (amount excluded from effectiveness testing)	
	Three months ended June 30,			Three months ended September 30,			Three months ended September 30,	
	2021	2020		2021	2020		2021	2020
Cross-currency interest rate swaps	$ —	$ (5,206)	Gain (loss) on sale of subsidiary	$ —	$ —	Interest (expense) income	$ —	$ 1,552

	Amount of pre-tax gain (loss) recognized in OCI on derivative		Location of gain (loss) reclassified from AOCI into income	Amount of gain (loss) reclassified from AOCI into income		Location of gain (loss) recognized in income on derivative (amount excluded from effectiveness testing)	Amount of gain (loss) recognized in income on derivative (amount excluded from effectiveness testing)	
	Six months ended June 30,			Six months ended June 30,			Six months ended June 30,	
	2021	2020		2021	2020		2021	2020
Cross-currency interest rate swaps	$ 9,787	$ 9,603	Net income from discontinued operations (1)	$ —	$ —	Interest (expense) income	$ 545	$ 3,244

(1) Includes the gain (loss) on the sale of the underlying subsidiary.

15. Income Taxes:

The effective income tax rate for the three months ended June 30, 2021 was (4,371.6)% compared to (254.3)% for the three months ended June 30, 2020. The effective income tax rate for the six months ended June 30, 2021 was (30.9)% compared to (562.5)% for the six months ended June 30, 2020. The Company's effective income tax rate has fluctuated primarily due to changes in income mix, the impacts of the Global Intangible Low Taxed Income ("GILTI") tax rules, discrete impacts related to intraperiod allocation revaluation of deferred tax assets and liabilities as a result of the Performance Chemicals divestiture, tax rate changes and changes in foreign exchange gains and losses, which create permanent differences in certain jurisdictions.

The difference between the U.S. federal statutory income tax rate and the Company's effective income tax rate for the six months ended June 30, 2021 was mainly due to state and local taxes, discrete tax impacts related to intraperiod allocation revaluation of deferred tax assets and liabilities as a result of the Performance Chemicals divestiture, tax rate changes and the tax effect of permanent differences related to foreign currency exchange gain or loss.

The difference between the U.S. federal statutory income tax rate and the Company's effective income tax rate for the six months ended June 30, 2020 was mainly due to state and local taxes, GILTI and the impact of intra-period allocation as a result of the Performance Chemicals and Performance Materials businesses being classified as held for sale.

16. Benefit Plans:

The following information is provided for (1) the Company-sponsored defined benefit pension plans covering employees in the U.S. and certain employees at its foreign subsidiaries and (2) the Company-sponsored unfunded plans to provide certain health care benefits to retired employees in the U.S.

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Components of net periodic expense (benefit) are as follows:

Defined Benefit Pension Plans

	U.S.		Foreign	
	Three months ended June 30,		Three months ended June 30,	
	2021	2020	2021	2020
Service cost	$ —	$ 192	$ —	$ 262
Interest cost	551	675	65	73
Expected return on plan assets	(1,094)	(970)	(65)	(70)
Amortization of net loss	—	—	—	23
Net periodic expense (benefit)	$ (543)	$ (103)	$ —	$ 288

	U.S.		Foreign	
	Six months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Service cost	$ —	$ 384	$ —	$ 521
Interest cost	1,102	1,351	130	144
Expected return on plan assets	(2,187)	(1,940)	(130)	(138)
Amortization of net loss	—	—	—	46
Net periodic (benefit) expense	$ (1,085)	$ (205)	$ —	$ 573

Other Postretirement Benefit Plans

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Interest cost	4	5	8	10
Amortization of prior service credit	(58)	(58)	(116)	(116)
Amortization of net loss	2	—	3	—
Net periodic benefit	$ (52)	$ (53)	$ (105)	$ (106)

17. Commitments and Contingent Liabilities:

There is a risk of environmental impact in chemical manufacturing operations. The Company’s environmental policies and practices are designed to comply with existing laws and regulations and to minimize the possibility of significant environmental impact. The Company is also subject to various other lawsuits and claims with respect to matters such as governmental regulations, labor and other actions arising out of the normal course of business. All claims that are probable and reasonably estimable have been accrued for in the Company’s condensed consolidated financial statements. When these matters are ultimately concluded and determined, the Company believes that there will be no material adverse effect on its consolidated financial position, results of operations or liquidity.

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18. Reportable Segments:

Summarized financial information for the Company's reportable segments is shown in the following table:

	Three months ended June 30,		Six months ended June 30,	
	2021	**2020**	**2021**	**2020**
Sales:				
Ecoservices	$ 120,741	$ 90,433	$ 220,963	$ 191,123
Silica Catalysts[1]	26,215	25,208	52,617	50,072
Total	$ 146,952	$ 115,641	$ 273,576	$ 241,195
Segment Adjusted EBITDA:[2]				
Ecoservices	$ 40,450	$ 34,996	$ 73,452	$ 72,179
Catalyst Technologies[3]	20,714	25,312	39,183	47,979
Total Segment Adjusted EBITDA[4]	$ 61,164	$ 60,308	$ 112,635	$ 120,158

(1) Excludes the Company's proportionate share of sales from the Zeolyst International and Zeolyst C.V. joint ventures (collectively, the "Zeolyst Joint Venture") accounted for using the equity method (see Note 11 to these condensed consolidated financial statements for further information). The proportionate share of sales is $33,186 and $40,852 for the three months ended June 30, 2021 and 2020, respectively. The proportionate share of sales is $62,164 and $73,143 for the six months ended June 30, 2021 and 2020, respectively.

(2) The Company defines Adjusted EBITDA as EBITDA adjusted for certain items as noted in the reconciliation below. Management evaluates the performance of its segments and allocates resources based on several factors, of which the primary measure is Adjusted EBITDA. Adjusted EBITDA should not be considered as an alternative to net income as an indicator of the Company's operating performance. Adjusted EBITDA as defined by the Company may not be comparable with EBITDA or Adjusted EBITDA as defined by other companies.

(3) The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $12,055 for the three months ended June 30, 2021, which includes $6,779 of equity in net income plus $1,620 of amortization of investment in affiliate step-up and $3,656 of joint venture depreciation, amortization and interest. The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $ 16,855 for the three months ended June 30, 2020, which includes $11,489 of equity in net income plus $1,659 of amortization of investment in affiliate step-up and $3,707 of joint venture depreciation, amortization and interest.

The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $22,592 for the six months ended June 30, 2021, which includes $12,014 of equity in net income plus $3,278 of amortization of investment in affiliate step-up and $7,300 of joint venture depreciation, amortization and interest. The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $ 30,580 for the six months ended June 30, 2020, which includes $19,806 of equity in net income plus $3,317 of amortization of investment in affiliate step-up and $7,457 of joint venture depreciation, amortization and interest.

(4) Total Segment Adjusted EBITDA differs from the Company's consolidated Adjusted EBITDA due to unallocated corporate expenses.

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A reconciliation of net loss from continuing operations to Segment Adjusted EBITDA is as follows:

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Reconciliation of net (loss) income from continuing operations to Segment Adjusted EBITDA				
Net (loss) income from continuing operations	$ (7,870)	$ 34,317	$ (10,618)	$ 30,970
Provision (benefit) for income taxes	7,694	(24,630)	2,504	(26,295)
Interest expense, net	8,741	15,136	19,197	30,434
Depreciation and amortization	19,985	18,746	39,485	37,421
Segment EBITDA	28,550	43,569	50,568	72,530
Joint venture depreciation, amortization and interest	3,656	3,707	7,300	7,457
Amortization of investment in affiliate step-up	1,620	1,659	3,278	3,317
Debt extinguishment costs	11,717	—	11,717	2,513
Net loss on asset disposals	1,601	440	2,379	602
Foreign currency exchange (gain) loss	(1,219)	(3,361)	3,882	3,709
LIFO benefit	(450)	(1,959)	(703)	(3,640)
Transaction and other related costs	610	392	1,083	1,192
Equity-based compensation	6,339	4,643	12,644	8,937
Restructuring, integration and business optimization expenses	71	848	2,330	1,196
Defined benefit pension plan benefit	(595)	(179)	(1,190)	(310)
Other	783	275	1,699	1,172
Adjusted EBITDA	52,683	50,034	94,987	98,675
Unallocated corporate expenses	8,481	10,274	17,648	21,483
Segment Adjusted EBITDA	$ 61,164	$ 60,308	$ 112,635	$ 120,158

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19. Stock-Based Compensation:

The Company is authorized to issue shares for common stock awards to employees, directors and affiliates of the Company in connection with the PQ Group Holdings Inc. 2017 Omnibus Incentive Plan, as Amended and Restated (the “2017 Plan”). During the six months ended June 30, 2021, the Company granted 1,697,623 restricted stock units and 211,985 performance stock units (at target) under the 2017 Plan as part of its equity incentive compensation program. Each restricted stock unit provides the recipient with the right to receive a share of common stock subject to graded vesting terms based on service, which for the awards granted during the six months ended June 30, 2021, generally requires approximately one year of service for members of the Company’s board of directors and approximately three years of service for employees.

The performance stock units granted during the six months ended June 30, 2021 provide the recipients with the right to receive shares of common stock dependent on the achievement of a total shareholder return (“TSR”) goal, and are generally subject to the provision of service through the vesting date of the award. The performance period for the TSR goal is measured based on a three-year performance period from January 1, 2021 through December 31, 2023. The TSR goal is based on the Company’s actual TSR percentage increase over the performance period. Depending on the Company’s performance relative to the TSR goal, each performance stock unit award recipient is eligible to earn a percentage of the target number of shares granted to the recipient, ranging from zero to 200%. The performance stock units, to the extent earned, will vest on the date the Company’s compensation and governance committee certifies the achievement of the performance metric for the three-year period ending December 31, 2023, which will occur subsequent to the end of the performance period but before the Company files its annual consolidated financial statements for the year ending December 31, 2023.

The value of the restricted stock units granted during the six months ended June 30, 2021 was based on the average of the high and low trading prices of the Company’s common stock on the NYSE on the preceding trading day, in accordance with the Company’s policy for valuing such awards. Compensation expense related to the restricted stock units is recognized on a straight-line basis over the respective vesting period.

The TSR goal of the performance stock units granted during the six months ended June 30, 2021 is considered a market condition as opposed to a vesting condition. Because a market condition is not considered a vesting condition, it is reflected in the grant date fair value of the award, and the associated compensation cost based on the fair value of the award is recognized over the performance period, regardless of whether the Company actually achieves the market condition or the level of achievement, as long as service is provided by the recipient. The Company used a Monte Carlo simulation to estimate the fair value of the portion of the awards subject to the TSR goal. The following table provides the assumptions used to determine the grant date fair value of the market condition-dependent / TSR goal-based portion of the Company’s performance stock units granted during the six months ended June 30, 2021 using a Monte Carlo simulation:

Expected dividend yield	— %
Risk-free interest rate	0.20 %
Expected volatility	41.70 %
Expected term (in years)	2.95
Grant date fair value	$ 13.21

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The following table summarizes the activity for the Company's restricted stock units and performance stock units for the six months ended June 30, 2021:

	Restricted Stock Units		Performance Stock Units	
	Number of Units	Weighted Average Grant Date Fair Value (per share)	Number of Units	Weighted Average Grant Date Fair Value (per share)
Nonvested as of December 31, 2020	1,841,139	$ 16.14	965,736	$ 17.69
Granted	1,697,623	$ 15.39	211,985	$ 13.21
Vested	(770,187)	$ 16.00	—	$ —
Forfeited	(35,834)	$ 15.77	(11,073)	$ 16.98
Nonvested as of June 30, 2021	2,732,741	$ 15.72	1,166,648	$ 16.92

Stock-based compensation expense for the Company is as follows:

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Continuing operations	6,339	4,629	$ 12,644	$ 8,969
Discontinued operations	1,816	1,737	3,691	3,317
Stock-based compensation expense	8,155	6,366	16,335	12,286
Continuing operations	(1,552)	(1,157)	(3,095)	(2,222)
Discontinued operations	(444)	(419)	(903)	(822)
Income tax benefit	(1,996)	(1,576)	(3,998)	(3,044)
Continuing operations	4,787	3,472	9,549	6,747
Discontinued operations	1,372	1,318	2,788	2,495
Stock-based compensation expense, net of income tax benefit	$ 6,159	$ 4,790	$ 12,337	$ 9,242

With the new grants of restricted stock units and performance stock units during the six months ended June 30, 2021, unrecognized compensation cost at June 30, 2021 was $33,653 for restricted stock units and $10,004 for performance stock units considered probable of vesting. The weighted-average period over which these costs are expected to be recognized at June 30, 2021 is 1.79 years for the restricted stock units and1.42 years for the performance stock units. Activity related to the Company's stock options and restricted stock awards was not material for the six months ended June 30, 2021.

20. Earnings per Share:

Basic earnings per share is calculated as income (loss) available to common stockholders, divided by the weighted average number of common shares outstanding during the period. The weighted average number of common shares outstanding during the period for the computation of basic earnings per share excludes restricted stock awards that have legally been issued but are nonvested during the period, as the sale of these shares is prohibited pending satisfaction of certain vesting conditions by the award recipients in order to earn the rights to the shares.

Diluted earnings per share is calculated as income (loss) available to common stockholders, divided by the weighted average number of common and potential common shares outstanding during the period, if dilutive. Potential common shares reflect (1) unvested restricted stock awards and restricted stock units with service vesting conditions, (2) performance stock units with vesting conditions considered probable of achievement and (3) options to purchase common stock, all of which have been included in the diluted earnings per share calculation using the treasury stock method.

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The reconciliation from basic to diluted weighted average shares outstanding is as follows:

	Three months ended June 30,		Six months ended June 30,	
	2021	**2020**	**2021**	**2020**
Weighted average shares outstanding – Basic	136,095,060	135,083,126	136,072,165	135,278,764
Dilutive effect of unvested common shares and restricted stock units with service conditions, performance stock units considered probable of vesting and assumed stock option exercises and conversions	—	588,704	—	800,776
Weighted average shares outstanding – Diluted	136,095,060	135,671,830	136,072,165	136,079,540

Basic and diluted loss per share are calculated as follows:

	Three months ended June 30,		Six months ended June 30,	
	2021	**2020**	**2021**	**2020**
Numerator:				
Net income (loss) attributable to Ecovyst Inc.	$ (1,490)	$ 15,926	$ (94,125)	$ 16,150
Denominator:				
Weighted average shares outstanding – Basic	136,095,060	135,083,126	136,072,165	135,278,764
Weighted average shares outstanding – Diluted	136,095,060	135,671,830	136,072,165	136,079,540
Net loss per share:				
Basic (loss) income per share	$ (0.01)	$ 0.12	$ (0.69)	$ 0.12
Diluted (loss) income per share	$ (0.01)	$ 0.12	$ (0.69)	$ 0.12

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The table below presents the details of the Company's weighted average equity-based awards outstanding during each respective period that were excluded from the calculation of diluted earnings per share:

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Restricted stock awards with performance only targets not yet achieved	846,715	1,507,366	864,946	1,511,868
Stock options with performance only targets not yet achieved	376,812	509,888	376,812	516,110
Anti-dilutive restricted stock awards, restricted stock units and performance stock units	—	2,262,974	—	1,421,401
Anti-dilutive stock options	—	844,475	—	847,641

Restricted stock awards and stock options with performance only vesting conditions were not included in the dilution calculation, as the performance targets have not been achieved nor were probable of achievement as of the end of the respective periods. On a weighted average basis, options to purchase 603,159 shares of common stock at the historical exercise price of $16.97 per share and 241,316 shares of common stock at the historical exercise price of $17.50 per share for the three months ended June 30, 2020, were excluded from the computation of diluted earnings per share, because the combination of the options' exercise price and remaining unamortized stock-based compensation expense was greater than the average market price of the common shares. On a weighted average basis, options to purchase 606,325 shares of common stock at the historical exercise price of $16.97 per share and 241,316 shares of common stock at the historical exercise price of $17.50 per share for the six months ended June 30, 2020, were excluded from the computation of diluted earnings per share, because the combination of the options' exercise price and remaining unamortized stock-based compensation expense was greater than the average market price of the common shares. The stock options with a historical exercise price of $16.97 per share expire on October 2, 2027, while the stock options with a historical exercise price of $17.50 per share expire on August 9, 2028. Anti-dilutive awards are not included in the dilution calculation, as their inclusion would have the effect of increasing diluted income per share.

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21. Supplemental Cash Flow Information:

With the exception of operating leases, the following table presents supplemental cash flow information for the consolidated Company:

	Six months ended June 30, 2021	Six months ended June 30, 2020
Cash paid during the period for:		
Income taxes, net of refunds	$ 12,269	$ 12,081
Interest(1)	28,794	53,796
Non-cash investing activity:		
Capital expenditures acquired on account but unpaid as of the period end	9,230	8,530
Right-of-use assets obtained in exchange for new lease liabilities (non-cash):		
Operating leases	5,933	561

(1) Cash paid for interest is shown net of capitalized interest for the periods presented and excludes $2,307 and $1,771 of net interest proceeds on swaps designated as net investment hedges for the six months ended June 30, 2021 and 2020, respectively, which are included within cash flows from investing activities, discontinued operations in the Company's condensed consolidated statements of cash flows.

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the condensed consolidated balance sheets as of June 30, 2021 and 2020 to the total of the same amounts shown in the condensed consolidated statements of cash flows for the six months then ended:

	June 30, 2021	June 30, 2020
Cash and cash equivalents	$ 55,757	$ 37,544
Restricted cash included in prepaid and other current assets	1,651	1,602
Total cash, cash equivalents and restricted cash shown in the condensed consolidated statements of cash flows	$ 57,408	$ 39,146

22. Subsequent Events:

Effective on August 1, 2021, PQ Group Holdings completed the sale of its Performance Chemicals business for $1,100,000, subject to certain adjustments as set forth in the agreement. See Note 3 for more information on the transaction. The Company used a portion of the net cash proceeds to repay the entire Senior Secured Term Loan Facility due February 2027 of $231,363 and the 5.750% Senior Notes due 2025 of $295,000. The 5.750% Senior Notes due 2025 were redeemed at a redemption price equal to the sum of 102.875% of the principal amount outstanding plus accrued and unpaid interest to, but excluding, August 2, 2021. Additionally, the Company's Board declared a special cash dividend of $3.20 per share, payable on August 23, 2021 to shareholders of record as of the close of business on August 12, 2021.

In connection with the closing of the sale of the Performance Chemicals business, PQ Group Holdings Inc. changed its name from "PQ Group Holdings Inc." to "Ecovyst Inc.". Refer to Note 1 for more information on the corporate name change, ticker symbol change and rebranding of segments.

Other than the items set forth above, the Company has evaluated subsequent events since the balance sheet date and determined that there are no additional items to disclose.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

Unless the context requires otherwise, references in this report to "Ecovyst," "the company," "we," "us" or "our" refer to Ecovyst Inc. and its consolidated subsidiaries.

Forward-looking Statements

This periodic report on Form 10-Q ("Form 10-Q") includes statements that express our opinions, expectations, beliefs, plans, objectives, assumptions or projections regarding future events or future results and therefore are, or may be deemed to be, "forward-looking statements". The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," "should" and similar expressions are intended to identify forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short- and long-term business operations and objectives, and financial needs. Examples of forward-looking statements include, but are not limited to, statements we make regarding the use of proceeds from the sale of the Performance Chemicals business segment, including the special cash dividend, our financial results and our liquidity, including our belief that our existing cash, cash equivalents and cash flow from operations, combined with availability under our asset based lending revolving credit facility will be sufficient to meet our presently anticipated future cash needs for at least the next 12 months. These forward-looking statements are subject to a number of risks, uncertainties and assumptions. Moreover, we operate in a very competitive and rapidly changing environment and new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed herein may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. Some of the key factors that could cause actual results to differ from our expectations include risks related to:

- the impact of the ongoing COVID-19 pandemic on the global economy and financial markets, as well as on our business and our suppliers, and the response of governments and of our company to the outbreak;
- as a global business, we are exposed to local business risks in different countries;
- we are affected by general economic conditions and economic downturns;
- exchange rate fluctuations could adversely affect our financial condition, results of operations and cash flows;
- our international operations require us to comply with anti-corruption laws, trade and export controls and regulations of the U.S. government and various international jurisdictions in which we do business;
- alternative technology or other changes in our customers' products may reduce or eliminate the need for certain of our products;
- our new product development and research and development efforts may not succeed and our competitors may develop more effective or successful products;
- our elevated level of indebtedness could adversely affect our financial condition;
- if we are unable to pass on increases in raw material prices, including natural gas, to our customers or to retain or replace our key suppliers, our results of operations and cash flows may be negatively affected;
- we face substantial competition in the industries in which we operate;
- we are subject to the risk of loss resulting from non-payment or non-performance by our customers;
- we rely on a limited number of customers for a meaningful portion of our business;
- multi-year customer contracts in our Ecoservices segment are subject to potential early termination and such contracts may not be renewed at the end of their respective terms;
- our quarterly results of operations are subject to fluctuations because demand for some of our products is seasonal;
- our growth projects may result in significant expenditures before generating revenues, if any, which may materially and adversely affect our ability to implement our business strategy;
- we may be liable to damages based on product liability claims brought against us or our customers for costs associated with recalls of our or our customers' products;
- we are subject to extensive environmental, health and safety regulations and face various risks associated with potential non-compliance or releases of hazardous materials;

- existing and proposed regulations to address climate change by limiting greenhouse gas emissions may cause us to incur significant additional operating and capital expenses and may impact our business and results of operations;
- production and distribution of our products could be disrupted for a variety of reasons, and such disruptions could expose us to significant losses or liabilities;
- the insurance that we maintain may not fully cover all potential exposures;
- we could be subject to damages based on claims brought against us by our customers or lose customers as a result of the failure of our products to meet certain quality specifications;
- our failure to protect our intellectual property and infringement on the intellectual property rights of third parties;
- losses and damages in connection with information technology risks could adversely affect our operations; and
- other factors set forth in Part I, “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2020.

The forward-looking statements included herein are made only as of the date hereof. You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this Form 10-Q to conform these statements to actual results or to changes in our expectations.

Overview

We are a leading integrated and innovative global provider of specialty catalysts and services. We believe that our products, which are predominantly inorganic, and services contribute to improving the sustainability of the environment.

In connection with the closing of the sale of the Performance Chemicals business, we changed our name from “PQ Group Holdings Inc.” to “Ecovyst Inc.”, changed the ticker symbol of our common stock listed on the New York Stock Exchange from “PQG” to “ECVT” and rebranded our former segments from “Refining Services” to “Ecoservices” and “Catalysts” to “Catalyst Technologies.” We conduct operations through two reporting segments:

Ecoservices: We are the leading provider of sulfuric acid recycling services to North American refineries for the production of alkylate, an essential gasoline component for lowering vapor pressure and increase octane to meet stringent gasoline specifications and fuel efficiency standards. We are also a leading North American producer of on-purpose virgin sulfuric acid for water treatment, mining, and industrial applications.

Catalyst Technologies: We are a global supplier of finished silica catalysts and catalyst supports necessary to produce high strength and high stiffness plastics used in packaging films, bottles, containers, and other molded applications. This segment includes our 50% interest in the Zeolyst Joint Venture, where we are a leading global supplier of zeolites used for catalysts that remove nitric oxide from diesel engine emissions as well as sulfur from fuels during the refining process.

<u>Recent Developments</u>

On December 14, 2020, we completed the sale of our Performance Materials business for $650.0 million, which was subject to certain adjustments for indebtedness, working capital and cash at the closing of the transaction. The results of operations, financial condition, and cash flows for the Performance Materials business are presented herein as discontinued operations. Except where noted, any tables, percentages or metrics included within this filing exclude the results of our former Performance Materials business. Refer to Note 3 to our condensed consolidated financial statements for additional information.

Effective on August 1, 2021, we completed the sale of our Performance Chemicals business for $1.1 billion, subject to certain adjustments set forth in the agreement. We used a portion of the net cash proceeds to repay the entire Senior Secured Term Loan Facility due February 2027 of $231.4 million and the 5.750% Senior Notes due 2025 (the “Senior Notes”) of $295.0 million. The Senior Notes were redeemed at a redemption price equal to the sum of 102.875% of the principal amount of the Senior Notes plus accrued and unpaid interest to, but excluding, August 2, 2021. Additionally, our Board of Directors (the “Board”) declared a special cash dividend of $3.20 per share, payable on August 23, 2021 to shareholders of record as of the close of business on August 12, 2021. The results of operations, financial condition, and cash flows for the Performance Chemicals business are presented herein as discontinued operations. Except where noted, any tables, percentages or metrics included within this filing exclude the results of our Performance Chemicals business. Refer to Note 3 to our condensed consolidated financial statements for additional information.

Key Performance Indicators

Adjusted EBITDA and Adjusted Net Income

Adjusted EBITDA and adjusted net income are financial measures that are not prepared in accordance with accounting principles generally accepted in the United States ("GAAP") and that we use to evaluate our operating performance, for business planning purposes and to measure our performance relative to that of our competitors. Adjusted EBITDA and adjusted net income are presented as key performance indicators as we believe these financial measures will enhance a prospective investor's understanding of our results of operations and financial condition. EBITDA consists of net income (loss) attributable to continuing operations before interest, taxes, depreciation and amortization. Adjusted EBITDA consists of EBITDA adjusted for (i) non-operating income or expense, (ii) the impact of certain non-cash, nonrecurring or other items included in net income (loss) and EBITDA that we do not consider indicative of our ongoing operating performance, and (iii) depreciation, amortization and interest of our 50% share of the Zeolyst Joint Venture. Adjusted net income consists of net income (loss) attributable to continuing operations adjusted for (i) non-operating income or expense and (ii) the impact of certain non-cash, nonrecurring or other items included in net income (loss) that we do not consider indicative of our ongoing operating performance. We believe that these non-GAAP financial measures provide investors with useful financial metrics to assess our operating performance from period-to-period by excluding certain items that we believe are not representative of our core business.

You should not consider adjusted EBITDA or adjusted net income in isolation or as alternatives to the presentation of our financial results in accordance with GAAP. The presentation of adjusted EBITDA and adjusted net income financial measures may differ from similar measures reported by other companies and may not be comparable to other similarly titled measures. In evaluating adjusted EBITDA and adjusted net income, you should be aware that we are likely to incur expenses similar to those eliminated in this presentation in the future and that certain of these items could be considered recurring in nature. Our presentation of adjusted EBITDA and adjusted net income should not be construed as an inference that our future results will be unaffected by unusual or nonrecurring items. Reconciliations of adjusted EBITDA and adjusted net income to GAAP net income (loss) are included in the results of operations discussion that follows for each of the respective periods.

Key Factors and Trends Affecting Operating Results and Financial Condition

Sales

Overall economic demand has significantly rebounded since the 2020 lows that resulted from the impact of COVID-19. Refineries have seen demand return with increasing miles driven, recovery from winter storm Uri and a general increase in economic activity. Emission control and refining catalysts continue to lag, as vehicle builds have been slowed for numerous reasons including computer chip shortages, but show signs of rebound in the second half of 2021.

In February 2021, the Gulf Coast of the United States experienced significant and unexpectedly severe weather from winter storm Uri. Extended freezing temperatures led to slowdowns or shutdowns at nearly all refineries and caused extensive damage due to frozen piping. Some refineries and facilities remained down for nearly a month. Our Ecoservices facilities located in the Gulf experienced damage, which required additional maintenance and some plant shutdowns.

Our Silica Catalysts product group, which is a part of our Catalyst Technologies segment, experiences demand fluctuations based upon the timing of our customer's fixed bed catalyst replacements.

Sales in our Ecoservices and Catalyst Technologies segments are made on both a purchase order basis and pursuant to long-term contracts.

Cost of Goods Sold

Cost of goods sold consists of variable product costs, fixed manufacturing expenses, depreciation expense and freight expenses. Variable product costs include all raw materials, energy and packaging costs that are directly related to the manufacturing process. Fixed manufacturing expenses include plant employment costs, manufacturing overhead and maintenance costs.

The primary raw materials for our Ecoservices segment include spent sulfuric acid, sulfur, acids, bases (including sodium hydroxide, or "caustic soda"), and certain metals. Spent sulfuric acid for our Ecoservices segment is supplied by customers for a nominal charge as part of their contracts. The primary raw materials used in the manufacture of products in our Catalyst Technologies segments include sodium silicate and cesium hydroxide.

Most of our Ecoservices contracts feature take-or-pay volume protection and/or quarterly price adjustments for commodity inputs, labor, the Chemical Engineering Index (U.S. chemical plant construction cost index) and natural gas. Over 80% of our Ecoservices segment sales for the year ended December 31, 2020 were under contracts featuring quarterly price adjustments. The price adjustments generally reflect actual costs for producing sulfuric acid and tend to protect us from volatility in labor, fixed costs and raw material pricing. The take-or-pay volume protection allows us to cover fixed costs through intermittent, temporary production issues at customer refineries.

While natural gas is not a direct feedstock for any product, natural gas powered furnaces are used to heat raw materials and create the chemical reactions necessary to produce end-products. We maintain multiple suppliers wherever possible, make forward purchases of natural gas in the United States and structure our customer contracts when possible to allow for the pass-through of raw material and natural gas costs.

Joint Ventures

We account for our investments in our equity joint ventures under the equity method. Our largest joint venture, the Zeolyst Joint Venture, manufactures high performance, specialty, zeolite-based catalysts for use in the packaging and engineered plastics, emission control, refining and petrochemical industries and other areas of the broader chemicals industry. Demand for the Zeolyst Joint Venture products fluctuate based upon the timing of our customer's fixed bed catalyst replacements. We share proportionally in the management of our joint ventures with the other parties to each such joint venture.

Seasonality

Our regeneration services product group, which is a part of our Ecoservices segment, typically experiences seasonal fluctuations as a result of higher demand for gasoline products in the summer months and lower demand in the winter months. These demand fluctuations result in higher sales and working capital requirements in the second and third quarter.

Foreign Currency

As a global business, we are subject to the impact of gains and losses on currency translations, which occur when the financial statements of foreign operations are translated into U.S. dollars. We operate in various geographies with approximately 10% of our sales for the six months ended June 30, 2021 and the year ended December 31, 2020 are in currencies other than the U.S. dollar. Because our consolidated financial results are reported in U.S. dollars, sales or earnings generated in currencies other than the U.S. dollar can result in a significant increase or decrease in the amount of those sales and earnings when translated to U.S. dollars. The foreign currency to which we have the most significant exchange rate exposure is the British pound.

Results of Operations

Three Months Ended June 30, 2021 Compared to the Three Months Ended June 30, 2020

Highlights

The following is a summary of our financial performance for the three months ended June 30, 2021 compared with the three months ended June 30, 2020.

Sales

- Sales increased $31.4 million to $147.0 million. The increase in sales was primarily due to a rebound in Ecoservices volumes and the impact of the pass-through of higher sulfur costs.

Gross Profit

- Gross profit increased $3.6 million to $38.5 million. The increase in gross profit was primarily due an increase in sales volumes partially offset by higher production and maintenance costs.

Operating Income

- Operating income increased by $1.7 million to $11.6 million. The increase in operating income was due to an increase in gross profit, which was partly offset by higher selling, general and administrative expenses.

Equity in Net Income of Affiliated Companies

- Equity in net income of affiliated companies for the three months ended June 30, 2021 was $6.8 million, compared to $11.5 million for the three months ended June 30, 2020. The decrease of $4.7 million was due to lower earnings generated by the Zeolyst Joint Venture for the three months ended June 30, 2021.

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The following is our unaudited condensed consolidated statements of income and a summary of financial results for the three months ended June 30, 2021 and 2020:

	Three months ended June 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Sales	$ 147.0	$ 115.6	$ 31.4	27.2 %
Cost of goods sold	108.5	80.7	27.8	34.4 %
Gross profit	38.5	34.9	3.6	10.3 %
Gross profit margin	*26.2 %*	*30.2 %*		
Selling, general and administrative expenses	21.9	20.6	1.3	6.3 %
Other operating expense, net	5.0	4.4	0.6	13.6 %
Operating income	11.6	9.9	1.7	17.2 %
Operating income margin	*7.9 %*	*8.5 %*		
Equity in net (income) from affiliated companies	(6.8)	(11.5)	4.7	(40.9)%
Interest expense, net	8.7	15.1	(6.4)	(42.4)%
Debt extinguishment costs	11.7	—	11.7	— %
Other income, net	(1.8)	(3.4)	1.6	(47.1)%
(Loss) Income before income taxes and noncontrolling interest	(0.2)	9.7	(9.9)	(102.1)%
Provision (benefit) for income taxes	7.7	(24.6)	32.3	(131.3)%
Effective tax rate	*(4,371.6)%*	*(254.3)%*		
Net (loss) income from continuing operations	(7.9)	34.3	(42.2)	(123.0)%
Net income (loss) from discontinued operations, net of tax	6.5	(18.1)	24.6	NM
Net (loss) income	(1.4)	16.2	(17.6)	(108.6)%
Less: Net income attributable to the noncontrolling interest - discontinued operations	0.1	0.3	(0.2)	(66.7)%
Net (loss) income attributable to Ecovyst Inc.	$ (1.5)	$ 15.9	$ (17.4)	(109.4)%

Sales

	Three months ended June 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Sales:				
Ecoservices	$ 120.8	$ 90.4	$ 30.4	33.6 %
Silica Catalysts	26.2	25.2	1.0	4.0 %
Total sales	$ 147.0	$ 115.6	$ 31.4	27.2 %

Ecoservices: Sales in Ecoservices for the three months ended June 30, 2021 were $120.8 million, an increase of $30.4 million, or 33.6%, compared to sales of $90.4 million for the three months ended June 30, 2020. The increase in sales was due to an increase in volumes of $21.0 million and higher average selling prices of $9.4 million.

Sales increased as result of a rebound in gasoline production by refiners compared to the prior year period that was depressed by stay-at-home mandates related to the COVID-19 pandemic. Higher average selling prices were primarily a result of the pass-through of higher sulfur costs of $9.8 million in our virgin sulfuric acid product group.

Silica Catalysts: Sales in Silica Catalysts for the three months ended June 30, 2021 were $26.2 million, an increase of $1.0 million, or 4.0%, compared to sales of $25.2 million for the three months ended June 30, 2020. The increase in sales was primarily due to a favorable product mix of polyethylene catalysts resulting in an increase in pricing of $1.8 million, which was partially offset by lower demand for our methyl methacrylate catalysts due to the timing of orders.

Gross Profit

Gross profit for the three months ended June 30, 2021 was $38.5 million, an increase of $3.6 million, or 10.3%, compared with $34.9 million for the three months ended June 30, 2020. The increase in gross profit was due to higher sales volumes of $13.3 million, favorable product mix of $2.0 million and favorable customer pricing of $11.2 million, which was partially offset by unfavorable manufacturing and maintenance costs of $22.3 million.

The increase in volumes was a result of a rebound in gasoline production by refiners compared to the prior year period that was depressed by the COVID-19 pandemic. Favorable product mix was a result of increased sales of higher-margin polyethylene catalysts. The increase in manufacturing costs was a result of the timing of plant "turnaround" maintenance projects and higher inventory absorption costs, which was offset by the pass-through of $9.8 million in higher sulfur costs.

Selling, General and Administrative Expenses

Selling, general and administrative expenses for the three months ended June 30, 2021 were $21.9 million, an increase of $1.3 million compared with $20.6 million for the three months ended June 30, 2020. The increase in selling, general and administrative expenses was due to an increase in compensation-related expenses partially offset by income generated from the transition service agreement entered into as part of the sale of the Performance Materials business.

Other Operating Expense, Net

Other operating expense, net was comparable between both periods. Other operating expense, net for the three months ended June 30, 2021 was $5.0 million, an increase of $0.6 million, compared with $4.4 million for the three months ended June 30, 2020.

Equity in Net Income of Affiliated Companies

Equity in net income of affiliated companies for the three months ended June 30, 2021 was $6.8 million, compared to $11.5 million for the three months ended June 30, 2020. The decrease was primarily due to $4.7 million of lower earnings from the Zeolyst Joint Venture during the three months ended June 30, 2021 as compared to the three months ended June 30, 2020. The decrease in earnings from the Zeolyst Joint Venture was due to lower demand for hydrocracking and specialty catalysts.

Interest Expense, Net

Interest expense, net for the three months ended June 30, 2021 was $8.7 million, a decrease of $6.4 million, as compared with $15.1 million for the three months ended June 30, 2020. The decrease in interest expense, net was primarily due to lower interest rates on our variable-rate debt, along with lower average debt balances and a favorable increase in variable versus fixed-rate debt during the three months ended June 30, 2021 as compared to the three months ended June 30, 2020.

Debt Extinguishment Costs

Debt extinguishment costs for the three months ended June 30, 2021 were$11.7 million.

In June 2021, we entered into an agreement for a new senior secured term loan facility and used the proceeds to repay portions of our existing term loan facilities. As a result of this transaction, we recorded $5.7 million of new creditor and third-party financing costs as debt extinguishment costs during the three months ended June 30, 2021. In addition, previous unamortized deferred financing costs of $1.7 million and original issue discount of$3.7 million associated with the previously outstanding debt were written off as debt extinguishment costs.

In June 2021, we amended our ABL Credit Agreement to decrease the aggregate amount of revolving loan commitments and extend the maturity date. As a result of the amendment, we wrote off $0.6 million of unamortized deferred financing costs as debt extinguishment costs.

Other (Income) Expense, Net

Other (income) expense, net for the three months ended June 30, 2021 was income of $1.8 million, a decrease of $1.6 million, as compared with income of $3.4 million for the three months ended June 30, 2020. The change in other expense, net primarily consisted of a decrease in foreign currency gains related to the non-permanent intercompany debt denominated in local currency and translated to the U.S. dollar.

Provision (Benefit) for Income Taxes

The provision for income taxes for the three months ended June 30, 2021 was $7.7 million compared to a $24.6 million provision for the three months ended June 30, 2020. The effective income tax rate for the three months ended June 30, 2021 was (4,371.6)% compared to (254.3)% for the three months ended June 30, 2020.

The Company's effective income tax rate fluctuates based primarily on changes in income mix, the impacts of the Global Intangible Low Taxed Income ("GILTI") tax rules, tax rate changes and changes in foreign exchange gains and losses, which create permanent differences in certain jurisdictions.

The difference between the U.S. federal statutory income tax rate and the Company's effective income tax rate for the three months ended June 30, 2021 was mainly due to the tax effect of permanent differences related to foreign currency exchange gain or loss, the inclusion of foreign earnings in U.S. taxable income, the discrete impact of the product line and asset sales, foreign tax rate changes, pre-tax losses with no associated tax benefit and state taxes.

Net Income Attributable to Ecovyst

For the foregoing reasons and after the effect of the non-controlling interest in earnings of subsidiaries for each period presented, net income attributable to Ecovyst was $1.5 million for the three months ended June 30, 2021 compared with net income of $15.9 million for the three months ended June 30, 2020.

Adjusted EBITDA

Summarized Segment Adjusted EBITDA information is shown below in the following table:

	Three months ended June 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Segment Adjusted EBITDA:[1]				
Ecoservices	$ 40.5	$ 35.0	$ 5.5	15.7 %
Catalyst Technologies[2]	20.7	25.3	(4.6)	(18.2)%
Total Segment Adjusted EBITDA[3]	61.2	60.3	0.9	1.5 %
Unallocated corporate expenses	(8.5)	(10.3)	1.8	17.5 %
Total Adjusted EBITDA	$ 52.7	$ 50.0	$ 2.7	5.4 %

(1) We define Segment Adjusted EBITDA as EBITDA adjusted for certain items as noted in the reconciliation below. Our management evaluates the performance of our segments and allocates resources based primarily on Segment Adjusted EBITDA. Segment Adjusted EBITDA does not represent cash flow for periods presented and should not be considered as an alternative to net income as an indicator of our operating performance or as an alternative to cash flows as a source of liquidity. Segment Adjusted EBITDA may not be comparable with EBITDA or Adjusted EBITDA as defined by other companies.

(2) The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment was $12.1 million for the three months ended June 30, 2021, which includes $6.8 million of equity in net income, excluding $1.6 million of amortization of investment in affiliate step-up plus $3.7 million of joint venture depreciation, amortization and interest. The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment was $16.9 million for the three months ended June 30, 2020, which includes $11.5 million of equity in net income, excluding $1.7 million of amortization of investment in affiliate step-up plus $3.7 million of joint venture depreciation, amortization and interest.

(3) Our total Segment Adjusted EBITDA differs from our total consolidated Adjusted EBITDA due to unallocated corporate expenses.

Ecoservices: Adjusted EBITDA for the three months ended June 30, 2021 was $40.5 million, an increase of $5.5 million, or 15.7%, compared with $35.0 million for the three months ended June 30, 2020. The increase in Adjusted EBITDA was a result of a rebound in sales volumes as compared to the prior year period partially offset by higher plant "turnaround" maintenance expenses.

Catalyst Technologies: Adjusted EBITDA for the three months ended June 30, 2021 was $20.7 million, a decrease of $4.6 million, or 18.2%, compared with $25.3 million for the three months ended June 30, 2020. The decrease in Adjusted EBITDA was primarily a result of reduced volumes in the Zeolyst Joint Venture due to timing of customer orders.

A reconciliation of net loss from continuing operations to Segment Adjusted EBITDA is as follows:

	Three months ended June 30, 2021	Three months ended June 30, 2020
	(in millions)	
Reconciliation of net (loss) income from continuing operations to Segment Adjusted EBITDA		
Net (loss) income from continuing operations	$ (7.9)	$ 34.3
Provision (benefit) for income taxes	7.7	(24.6)
Interest expense, net	8.7	15.1
Depreciation and amortization	20.0	18.8
EBITDA	28.5	43.6
Joint venture depreciation, amortization and interest[(a)]	3.7	3.7
Amortization of investment in affiliate step-up[(b)]	1.6	1.7
Debt extinguishment costs	11.7	—
Net loss on asset disposals[(c)]	1.6	0.4
Foreign currency exchange gain[(d)]	(1.2)	(3.4)
LIFO benefit[(e)]	(0.5)	(2.0)
Transaction and other related costs[(f)]	0.6	0.4
Equity-based compensation	6.3	4.6
Restructuring, integration and business optimization expenses[(g)]	0.1	0.8
Defined benefit pension benefit[(h)]	(0.6)	(0.2)
Other[(i)]	0.9	0.4
Adjusted EBITDA	52.7	50.0
Unallocated corporate expenses	8.5	10.3
Segment Adjusted EBITDA	$ 61.2	$ 60.3

(a) We use Adjusted EBITDA as a performance measure to evaluate our financial results. Because our Catalyst Technologies segment includes our 50% interest in the Zeolyst Joint Venture, we include an adjustment for our 50% proportionate share of depreciation, amortization and interest expense of the Zeolyst Joint Venture.

(b) Represents the amortization of the fair value adjustments associated with the equity affiliate investment in the Zeolyst Joint Venture as a result of the combination of the businesses of PQ Holdings Inc. and Eco Services Operations LLC in May 2016 (the "Business Combination"). We determined the fair value of the equity affiliate investment and the fair value step-up was then attributed to the underlying assets of the Zeolyst Joint Venture. Amortization is primarily related to the fair value adjustments associated with fixed assets and intangible assets, including customer relationships and technical know-how.

(c) When asset disposals occur, we remove the impact of net gain/loss of the disposed asset because such impact primarily reflects the non-cash write-off of long-lived assets no longer in use.

(d) Reflects the exclusion of the foreign currency transaction gains and losses in the statements of income, which primarily relates to the non-permanent intercompany debt denominated in local currency translated to U.S. dollars.

(e) Represents non-cash adjustments to the Company's LIFO reserves for certain inventories in the U.S. that are valued using the LIFO method, which we believe provides a means of comparison to other companies that may not use the same basis of accounting for inventories.

(f) Relates to certain transaction costs, including debt financing, due diligence and other costs related to transactions that are completed, pending or abandoned, that we believe are not representative of our ongoing business operations.

(g) Includes the impact of restructuring, integration and business optimization expenses which are incremental costs that are not representative of our ongoing business operations.

(h) Represents adjustments for defined benefit pension plan (benefit) costs in our statements of income. All of our defined benefit pension plan obligations are under defined benefit pension plans that are frozen. As such, we do not view such income or expenses as core to our ongoing business operations.

(i) Other costs consist of certain expenses that are not core to our ongoing business operations, including environmental remediation-related costs associated with the legacy operations of our business prior to a business combination consummated in a prior year period and capital and franchise taxes. Included in this line-item are rounding discrepancies that may arise from rounding from dollars (in thousands) to dollars (in millions).

Adjusted Net Income

Summarized adjusted net income information is shown below in the following table:

	Three months ended June 30,					
	2021			2020		
	Pre-tax	Tax expense (benefit)	After-tax	Pre-tax	Tax expense (benefit)	After-tax
	(in millions)					
Reconciliation of net (loss) income from continuing operations to Adjusted Net Income[1] [2]						
Net (loss) income attributable to Ecovyst Inc.	$ (0.2)	$ 7.7	$ (7.9)	$ 9.7	$ (24.6)	$ 34.3
Amortization of investment in affiliate step-up[b]	1.6	0.4	1.2	1.7	0.7	1.0
Debt extinguishment costs	11.7	3.1	8.6	—	—	—
Net loss on asset disposals[c]	1.6	0.4	1.2	0.4	0.2	0.2
Foreign currency exchange gain[d]	(1.2)	(0.4)	(0.8)	(3.4)	(0.9)	(2.5)
LIFO benefit[e]	(0.5)	(0.1)	(0.4)	(2.0)	(0.8)	(1.2)
Transaction and other related costs[f]	0.6	0.2	0.4	0.4	0.2	0.2
Equity-based compensation	6.3	1.7	4.6	4.6	1.8	2.8
Restructuring, integration and business optimization expenses[g]	0.1	—	0.1	0.8	0.3	0.5
Defined benefit pension plan benefit[h]	(0.6)	(0.2)	(0.4)	(0.2)	(0.1)	(0.1)
Other[i]	0.9	0.4	0.5	0.4	0.1	0.3
Adjusted Net Income, including non-cash GILTI tax	$ 20.3	$ 13.2	$ 7.1	$ 12.4	$ (23.1)	$ 35.5
Intraperiod allocation for restating discontinued operations[3]	—	(7.8)	7.8	—	27.9	(27.9)
Adjusted Net Income	$ 20.3	$ 5.4	$ 14.9	$ 12.4	$ 4.8	$ 7.6

(1) We define adjusted net income as net income attributable to Ecovyst adjusted for non-operating income or expense and the impact of certain non-cash or other items that are included in net income that we do not consider indicative of our ongoing operating performance. Adjusted net income is presented as a key performance indicator as we believe it will enhance a prospective investor's understanding of our results of operations and financial condition. Adjusted net income may not be comparable with net income or adjusted net income as defined by other companies.

(2) Refer to the Adjusted EBITDA notes above for more information with respect to each adjustment.

(3) Due to reporting the Performance Chemicals business as held for sale in discontinued operations, the estimated tax rate used to value deferred tax assets ("DTAs") and deferred tax liabilities ("DTLs") needs to be adjusted to remove the Performance Chemicals rate. Given it is a direct result of the sale of discontinued operations and the need to adjust the estimated tax rate arose because of discontinued operations, the impact of revaluing the reporting entity's DTAs and DTLs are reflected in continuing operations. Due to this revaluation being solely as a result of the Performance Chemicals divestiture and a non-cash item, it is treated as an addback.

The adjustments to net income attributable to Ecovyst Inc. are shown net of applicable tax rates as determined by the calculation of our quarterly tax provision under interim financial reporting for the three months ended June 30, 2021 and June 30, 2020, except for the foreign currency exchange loss, impacts of tax rate changes and the effects of the sale of assets for which the taxes are calculated as discrete items using the applicable statutory income tax rates.

Results of Operations

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

Highlights

The following is a summary of our financial performance for the six months ended June 30, 2021 compared with the six months ended June 30, 2020.

Sales

- Sales increased $32.4 million to $273.6 million. The increase in sales was primarily due to favorable cost pass-through pricing and a rebound in volume in our Ecoservices segment.

Gross Profit

- Gross profit decreased $4.0 million to $68.6 million. The decrease in gross profit was primarily due an increase in manufacturing costs, which was partially offset by higher sales volumes.

Operating Income

- Operating income decreased by $7.7 million to $14.1 million. The decrease in operating income was due to a decrease in gross profit during the current year period.

Equity in Net Income of Affiliated Companies

- Equity in net income of affiliated companies for the six months ended June 30, 2021 was $12.0 million, compared with $19.8 million for the six months ended June 30, 2020. The decrease of $7.8 million was due to a decrease in sales volume in the Zeolyst Joint Venture for the six months ended June 30, 2021.

The following is our unaudited condensed consolidated statements of income and a summary of financial results for the six months ended June 30, 2021 and 2020:

	Six months ended June 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Sales	$ 273.6	$ 241.2	$ 32.4	13.4 %
Cost of goods sold	205.0	168.6	36.4	21.6 %
Gross profit	68.6	72.6	(4.0)	(5.5)%
Gross profit margin	*25.1 %*	*30.1 %*		
Selling, general and administrative expenses	44.0	42.9	1.1	2.6 %
Other operating expense, net	10.5	7.9	2.6	32.9 %
Operating income	14.1	21.8	(7.7)	(35.3)%
Operating income margin	*5.2 %*	*9.0 %*		
Equity in net (income) from affiliated companies	(12.0)	(19.8)	7.8	(39.4)%
Interest expense, net	19.2	30.4	(11.2)	(36.8)%
Debt extinguishment costs	11.7	2.5	9.2	368.0 %
Other expense, net	3.3	4.0	(0.7)	(17.5)%
(Loss) income before income taxes and noncontrolling interest	(8.1)	4.7	(12.8)	(272.3)%
Provision (benefit) for income taxes	2.5	(26.3)	28.8	(109.5)%
Effective tax rate	*(30.9)%*	*(562.5)%*		
Net (loss) income from continuing operations	(10.6)	31.0	(41.6)	(134.2)%
Net loss from discontinued operations, net of tax	(83.3)	(14.2)	(69.1)	NM
Net (loss) income	(93.9)	16.8	(110.7)	NM
Less: Net income attributable to the noncontrolling interest - discontinued operations	0.3	0.6	(0.3)	(50.0)%
Net (loss) income attributable to Ecovyst Inc.	$ (94.2)	$ 16.2	$ (110.4)	NM

Sales

	Six months ended June 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Sales:				
Ecoservices	$ 221.0	$ 191.1	$ 29.9	15.6 %
Silica Catalysts	52.6	50.1	2.5	5.0 %
Total sales	$ 273.6	$ 241.2	$ 32.4	13.4 %

Ecoservices: Sales in Ecoservices for the six months ended June 30, 2021 were $221.0 million, an increase of $29.9 million, or 15.6%, compared to sales of $191.1 million for the six months ended June 30, 2020. The increase in sales was due to higher average selling prices of $15.2 million and an increase in sales volumes of $14.7 million. Higher average selling prices benefited from the pass-through of higher sulfur costs of $12.8 million. Sales volumes increased as result of a rebound in gasoline production by refiners compared to the prior year period that was depressed by the COVID-19 pandemic.

Silica Catalysts: Sales in Silica Catalysts for the six months ended June 30, 2021 were $52.6 million, an increase of $2.5 million, or 5.0%, compared to sales of $50.1 million for the six months ended June 30, 2020. The increase in sales was primarily due to product mix of polyethylene catalysts resulting in an increase in pricing of $2.5 million.

Gross Profit

Gross profit for the six months ended June 30, 2021 was $68.6 million, a decrease of $4.0 million, or 5.5%, compared with $72.6 million for the six months ended June 30, 2020. The decrease in gross profit was due to higher maintenance costs and unfavorable inventory absorption, which was partially offset by favorable volumes in Ecoservices of $10.0 million.

The increase in manufacturing costs is due to one-time repair costs related to winter storms in the Gulf region, timing of plant "turnaround" maintenance expenditures and higher inventory absorption costs. Favorable product mix was a result of increased sales of higher-margin polyethylene catalysts. The increase in volumes was a result of a rebound in gasoline production by refiners compared to the prior year period that was burdened by the COVID-19 pandemic.

Selling, General and Administrative Expenses

Selling, general and administrative expenses for the six months ended June 30, 2021 was $44.0 million, a increase of $1.1 million as compared to $42.9 million for the six months ended June 30, 2020. The increase in selling, general and administrative expenses was due to increased compensation-related expenses, partially offset by income generated from the transition service agreement entered into as part of the sale of the Performance Materials business.

Other Operating Expense, Net

Other operating expense, net for the six months ended June 30, 2021 was $10.5 million, an increase of $2.6 million, compared with $7.9 million for the si months ended June 30, 2020. The increase in other operating expense, net was a result of severance charges incurred in the current year period.

Equity in Net Income of Affiliated Companies

Equity in net income of affiliated companies for the six months ended June 30, 2021 was $12.0 million, compared to $19.8 million for the six months ended June 30, 2020. The decrease was primarily due to $7.8 million of lower earnings from the Zeolyst Joint Venture during the six months ended June 30, 2021. The decline in earnings was a result of lower volume from deferred customer change-outs related to reduced output from oil refineries and heavy duty vehicle production, which led to a decrease in demand for our emission control and hydrocracking catalysts.

Interest Expense, Net

Interest expense, net for the six months ended June 30, 2021 was $19.2 million, a decrease of $11.2 million, as compared with $30.4 million for the six months ended June 30, 2020. The decrease in interest expense was primarily due to lower interest rates on our variable-rate debt.

Debt Extinguishment Costs

Debt extinguishment costs were $11.7 million and $2.5 million for the six months ended June 30, 2021 and 2020, respectively.

In June 2021, we entered into an agreement for a new senior secured term loan facility and used the proceeds to repay a portion of our existing term loan facilities. As a result of this transaction, we recorded $5.7 million of new creditor and third-party financing costs as debt extinguishment costs during the three months ended June 30, 2021. In addition, previous unamortized deferred financing costs of $1.7 million and original issue discount of $3.7 million associated with the previously outstanding debt were written off as debt extinguishment costs.

In June 2021, we amended our ABL Credit Agreement to decrease the aggregate amount of revolving loan commitments and extend the maturity date. As a result of the amendment, we wrote off $0.6 million of unamortized deferred financing costs as debt extinguishment costs.

On February 7, 2020, we amended our existing senior secured term loan facility to reduce the applicable interest rates and extend the maturity of the facility to February 2027. We recorded $2.2 million of new creditor and third-party financing fees as debt extinguishment costs for the six months ended June 30, 2020. In addition, previously unamortized deferred financing costs of $0.1 million and original issue discount of $0.2 million associated with the existing senior secured term loan facility were written off as debt extinguishment costs for the six months ended June 30, 2020.

Other (Income) Expense, Net

Other expense, net for the six months ended June 30, 2021 was expense of $3.3 million, a decrease of $0.7 million, as compared with expense of $4.0 million for the six months ended June 30, 2020. The decrease in other expense, net primarily consisted of a decrease in franchise taxes.

Provision (Benefit) for Income Taxes

The benefit for income taxes for the six months ended June 30, 2021 was $2.5 million compared to a $26.3 million benefit for the six months ended June 30, 2020. The effective income tax rate for the six months ended June 30, 2021 was (30.9)% compared to (562.5)% for the six months ended June 30, 2020.

The Company's effective income tax rate fluctuates primarily due to income mix, the impacts of GILTI, discrete impacts of the divestiture of the Performance Chemicals business, tax rate changes and changes in foreign exchange gains and losses, which create permanent differences in certain jurisdictions.

The difference between the U.S. federal statutory income tax rate and the Company's effective income tax rate for the six months ended June 30, 2021 was mainly due to the impacts of GILTI, discrete tax impacts related to intraperiod allocation revaluation of deferred tax assets and liabilities as a result of the Performance Chemicals divestiture, tax rate changes and the tax effect of permanent differences related to foreign currency exchange gain or loss.

Net (Loss) Income Attributable to Ecovyst

For the foregoing reasons and after the effect of the non-controlling interest in earnings of subsidiaries for each period presented, net loss attributable to Ecovyst was $94.2 million for the six months ended June 30, 2021 compared with net income of $16.2 million for the six months ended June 30, 2020.

Adjusted EBITDA

Summarized Segment Adjusted EBITDA information is shown below in the following table:

	Six months ended June 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Segment Adjusted EBITDA:[1]				
Ecoservices	$ 73.5	$ 72.2	$ 1.3	1.8 %
Catalyst Technologies[2]	39.2	48.0	(8.8)	(18.3)%
Total Segment Adjusted EBITDA[3]	112.6	120.2	(7.6)	(6.3)%
Unallocated corporate expenses	(17.6)	(21.5)	3.9	18.1 %
Total Adjusted EBITDA	$ 95.0	$ 98.7	$ (3.7)	(3.7)%

(1) We define Segment Adjusted EBITDA as EBITDA adjusted for certain items as noted in the reconciliation below. Our management evaluates the performance of our segments and allocates resources based primarily on Segment Adjusted EBITDA. Segment Adjusted EBITDA does not represent cash flow for periods presented and should not be considered as an alternative to net income as an indicator of our operating performance or as an alternative to cash flows as a source of liquidity. Segment Adjusted EBITDA may not be comparable with EBITDA or Adjusted EBITDA as defined by other companies.

(2) The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $22.6 million for the six months ended June 30, 2021, which includes $12.0 million of equity in net income, excluding $3.3 million of amortization of investment in affiliate step-up plus $7.3 million of joint venture depreciation, amortization and interest. The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $30.6 million for the six months ended June 30, 2020, which includes $19.8 million of equity in net income, excluding $3.3 million of amortization of investment in affiliate step-up plus $7.5 million of joint venture depreciation, amortization and interest.

(3) Our total Segment Adjusted EBITDA differs from our total consolidated Adjusted EBITDA due to unallocated corporate expenses. Rounding discrepancies may arise when rounding segment results from dollars (in thousands) to dollars (in millions).

Ecoservices: Adjusted EBITDA for the six months ended June 30, 2021 was $73.5 million, an increase of $1.3 million, or 1.8%, compared with $72.2 million for the six months ended June 30, 2020. The increase in Adjusted EBITDA was due to a rebound in sales volumes partially offset by higher repair costs to our facilities and lost sales related to winter storm Uri.

Catalyst Technologies: Adjusted EBITDA for the six months ended June 30, 2021 was $39.2 million, a decrease of $8.8 million, or 18.3%, compared with $48.0 million for the six months ended June 30, 2020. The decrease in Adjusted EBITDA was a result of lower Zeolyst Joint Venture sales volumes and unfavorable fixed cost absorption.

A reconciliation of net loss from continuing operations to Segment Adjusted EBITDA is as follows:

	Six months ended June 30,	
	2021	2020
	(in millions)	
Reconciliation of net (loss) income from continuing operations to Segment Adjusted EBITDA		
Net (loss) income from continuing operations	$ (10.6)	$ 31.0
Provision (benefit) for income taxes	2.5	(26.3)
Interest expense, net	19.2	30.4
Depreciation and amortization	39.5	37.4
EBITDA	50.6	72.5
Joint venture depreciation, amortization and interest[(a)]	7.3	7.5
Amortization of investment in affiliate step-up[(b)]	3.3	3.3
Debt extinguishment costs	11.7	2.5
Net loss on asset disposals[(c)]	2.4	0.6
Foreign currency exchange loss[(d)]	3.9	3.7
LIFO benefit[(e)]	(0.7)	(3.6)
Transaction and other related costs[(f)]	1.1	1.2
Equity-based compensation	12.6	8.9
Restructuring, integration and business optimization expenses[(g)]	2.3	1.2
Defined benefit pension plan benefit[(h)]	(1.2)	(0.3)
Other[(i)]	1.7	1.2
Adjusted EBITDA	95.0	98.7
Unallocated corporate expenses	17.6	21.5
Segment Adjusted EBITDA	$ 112.6	$ 120.2

(a) We use Adjusted EBITDA as a performance measure to evaluate our financial results. Because our Catalyst Technologies segment includes our 50% interest in the Zeolyst Joint Venture, we include an adjustment for our 50% proportionate share of depreciation, amortization and interest expense of the Zeolyst Joint Venture.

(b) Represents the amortization of the fair value adjustments associated with the equity affiliate investment in the Zeolyst Joint Venture as a result of the combination of the businesses of PQ Holdings Inc. and Eco Services Operations LLC in May 2016. We determined the fair value of the equity affiliate investment and the fair value step-up was then attributed to the underlying assets of the Zeolyst Joint Venture. Amortization is primarily related to the fair value adjustments associated with fixed assets and intangible assets, including customer relationships and technical know-how.

(c) When asset disposals occur, we remove the impact of net gain/loss of the disposed asset because such impact primarily reflects the non-cash write-off of long-lived assets no longer in use.

(d) Reflects the exclusion of the foreign currency transaction gains and losses in the statements of income, primarily related to the non-permanent intercompany debt denominated in local currency translated to U.S. dollars.

(e) Represents non-cash adjustments to the Company's LIFO reserves for certain inventories in the U.S. that are valued using the LIFO method, which we believe provides a means of comparison to other companies that may not use the same basis of accounting for inventories.

(f) Relates to certain transaction costs, including debt financing, due diligence and other costs related to transactions that are completed, pending or abandoned, that we believe are not representative of our ongoing business operations.

(g) Includes the impact of restructuring, integration and business optimization expenses which are incremental costs that are not representative of our ongoing business operations.

(h) Represents adjustments for defined benefit pension plan (benefit) costs in our statements of income. All of our defined benefit pension plan obligations are under defined benefit pension plans that are frozen. As such, we do not view such income or expenses as core to our ongoing business operations.

(i) Other costs consist of certain expenses that are not core to our ongoing business operations, including environmental remediation-related costs associated with the legacy operations of our business prior to a business combination consummated in a prior year period and capital and franchise taxes. Included in this line-item are rounding discrepancies that may arise from rounding from dollars (in thousands) to dollars (in millions).

Adjusted Net Income

Summarized adjusted net income information is shown below in the following table:

	Six months ended June 30,					
	2021			2020		
	Pre-tax	Tax expense (benefit)	After-tax	Pre-tax	Tax expense (benefit)	After-tax
	(in millions)					
Reconciliation of net (loss) income from continuing operations to Adjusted Net Income[1] [2]						
Net (loss) income attributable to Ecovyst Inc.	$ (8.1)	$ 2.5	$ (10.6)	$ 4.7	$ (26.3)	$ 31.0
Amortization of investment in affiliate step-up[b]	3.3	0.9	2.4	3.3	1.2	2.1
Debt extinguishment costs	11.7	3.1	8.6	2.5	0.9	1.6
Net loss on asset disposals[c]	2.4	0.7	1.7	0.6	0.2	0.4
Foreign currency exchange loss[d]	3.9	1.1	2.8	3.7	1.4	2.3
LIFO benefit[e]	(0.7)	(0.2)	(0.5)	(3.6)	(1.3)	(2.3)
Transaction and other related costs[f]	1.1	0.3	0.8	1.2	0.4	0.8
Equity-based compensation	12.6	3.5	9.1	8.9	3.2	5.7
Restructuring, integration and business optimization expenses[g]	2.3	0.6	1.7	1.2	0.4	0.8
Defined benefit pension plan benefit[h]	(1.2)	(0.3)	(0.9)	(0.3)	(0.1)	(0.2)
Other[i]	1.7	0.5	1.2	1.2	0.6	0.6
Adjusted Net Income, including Intraperiod allocation	$ 29.0	$ 12.7	$ 16.3	$ 23.4	$ (19.4)	$ 42.8
Intraperiod allocation for restating discontinued operations[3]	—	(4.8)	4.8	—	27.9	(27.9)
Adjusted Net Income	$ 29.0	$ 7.9	$ 21.1	$ 23.4	$ 8.5	$ 14.9

(1) We define adjusted net income as net income attributable to Ecovyst adjusted for non-operating income or expense and the impact of certain non-cash or other items that are included in net income that we do not consider indicative of our ongoing operating performance. Adjusted net income is presented as a key performance indicator as we believe it will enhance a prospective investor's understanding of our results of operations and financial condition. Adjusted net income may not be comparable with net income or adjusted net income as defined by other companies.

(2) Refer to the Adjusted EBITDA notes above for more information with respect to each adjustment.

(3) Due to reporting the Performance Chemicals business as held for sale in discontinued operations, the estimated tax rate used to value deferred tax assets ("DTAs") and deferred tax liabilities ("DTLs") needs to be adjusted to remove the Performance Chemicals rate. Given it is a direct result of the sale of discontinued operations and the need to adjust the estimated tax rate arose because of discontinued operations, the impact of revaluing the reporting entity's DTAs and DTLs are reflected in continuing operations. Due to this revaluation being solely as a result of the Performance Chemicals divestiture and a non-cash item, it is treated as an addback.

The adjustments to net income attributable to Ecovyst Inc. are shown net of applicable tax rates of 27.7% and 195.3% for the six months ended June 30, 2021 and 2020, respectively, except for the foreign currency exchange loss and discrete impacts of the divestiture of the Performance Chemicals business.

Financial Condition, Liquidity and Capital Resources

Our primary sources of liquidity consist of cash flows from operations, existing cash balances as well as funds available under our asset based lending revolving credit facility. We expect that ongoing requirements for debt service and capital expenditures will be funded from these sources of funds. Our primary liquidity requirements include funding working capital requirements (primarily inventory and accounts receivable, net of accounts payable and other accrued liabilities), debt service requirements and capital expenditures. Our capital expenditures include both maintenance of business, which include spending on maintenance and health, safety and environmental initiatives as well as growth, which includes spending to drive organic sales growth and cost savings initiatives.

We believe that our existing cash, cash equivalents and cash flows from operations, combined with availability under our asset based lending revolving credit facility, will be sufficient to meet our presently anticipated future cash needs for at least the next twelve months. We may also pursue strategic acquisition or divestiture opportunities, which may impact our future cash requirements. We may, from time to time, increase borrowings under our asset based lending revolving credit facility to meet our future cash needs. As of June 30, 2021, we had cash and cash equivalents of $55.8 million and availability of $107.1 million under our asset based lending revolving credit facility, after giving effect to $17.8 million of outstanding letters of credit, for a total available liquidity of $162.9 million. We did not have any revolving credit facility borrowings as of June 30, 2021. As of June 30, 2021, we were in compliance with all covenants under our debt agreements.

On a continuing operations basis, we held an immaterial balance of cash and cash equivalents in foreign jurisdictions as of June 30, 2021. We repatriate cash held outside of the United States from certain foreign subsidiaries in order to meet domestic liquidity needs. Depending on domestic and foreign cash balances, we have certain flexibility to repatriate funds in order to meet those needs. Specifically, we have an intercompany loan structure in place with foreign subsidiaries that allows us to repatriate foreign cash in a tax efficient manner from those subsidiaries. Repatriation of foreign cash is generally not subject to U.S. federal income taxes at the time of cash distribution. However, foreign earnings may still be taxed for state income tax purposes, as well as subject to certain foreign withholding tax obligations, when cash amounts are distributed back to the U.S.

Our liquidity requirements are significant, primarily due to debt service requirements. As reported, our cash interest paid for the six months ended June 30, 2021 and 2020 was approximately $28.8 million and $53.8 million, respectively. Before any impact of hedges, a one percent change in assumed interest rates for our variable interest credit facilities would have an annual impact of approximately $2.3 million on interest expense. We hedge the interest rate fluctuations on debt obligations through interest rate cap agreements. As of June 30, 2021, we had interest rate caps on $500.0 million of notional variable-rate debt with a cap rate of 0.84% through July 2022 and $400.0 million of notional variable-rate debt with a cap rate of 1.00% through August 2023.

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Cash Flow

	Six months ended June 30, 2021	Six months ended June 30, 2020
	(in millions)	
Continuing Operations		
Net cash provided by (used in):		
Operating activities	$ 37.2	$ 24.3
Investing activities	(70.0)	(19.8)
Financing activities	(5.0)	(6.7)
Discontinued Operations		
Net cash provided by (used in):		
Operating activities	12.1	37.8
Investing activities	(32.0)	(16.4)
Financing activities	(1.1)	0.8
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(3.3)	(3.3)
Net change in cash, cash equivalents and restricted cash	(62.1)	16.7
Cash, cash equivalents and restricted cash at beginning of period	137.2	73.9
Cash, cash equivalents and restricted cash at end of period	75.1	90.6
Less: cash, cash equivalents and restricted cash of discontinued operations	(17.6)	(51.4)
Cash, cash equivalents and restricted cash at end of period of continuing operations	$ 57.4	$ 39.1

	Six months ended June 30, 2021	Six months ended June 30, 2020
	(in millions)	
Continuing Operations		
Net (loss) income	$ (10.6)	$ 31.0
Non-cash and non-working capital related activities[1]	67.4	47.5
Changes in working capital	(15.2)	(53.8)
Other operating activities	(4.4)	(0.4)
Net cash provided by operating activities, continuing operations	$ 37.2	$ 24.3

[1] Includes depreciation, amortization, amortization of deferred financing costs and original issue discount, foreign currency exchange gains and losses, deferred income tax provision (benefit), net (gains) losses on asset disposals, stock compensation expense and equity in net income and dividends received from affiliated companies.

	Six months ended June 30, 2021	Six months ended June 30, 2020
	(in millions)	
Continuing Operations		
Working capital changes that provided (used) cash:		
Receivables	$ (18.4)	$ (1.0)
Inventories	5.5	(1.7)
Prepaids and other current assets	(1.8)	—
Accounts payable	2.6	(5.1)
Accrued liabilities	(3.1)	(46.0)
	$ (15.2)	$ (53.8)

	Six months ended June 30,	
	2021	2020
	(in millions)	
Continuing Operations		
Purchases of property, plant and equipment	$ (28.0)	$ (22.2)
Business combinations, net of cash acquired	(42.0)	—
Proceeds from sale of assets	—	2.4
Net cash used in investing activities, continuing operations	$ (70.0)	$ (19.8)

	Six months ended June 30,	
	2021	2020
	(in millions)	
Continuing Operations		
Net revolving credit facilities borrowings	$ —	$ —
Net cash borrowings (repayments) on debt obligations	(3.5)	(3.0)
Other financing activities	(1.5)	(3.7)
Net cash used in financing activities, continuing operations	$ (5.0)	$ (6.7)

The following discussions related to our cash flows are presented on a continuing operations basis, which excludes the cash flows from our Performance Materials and Performance Chemicals businesses accounted for as discontinued operations.

Net cash provided by operating activities was $37.2 million for the six months ended June 30, 2021, compared to $24.3 million provided for the six months ended June 30, 2020. Cash generated by operating activities, other than changes in working capital, was lower during the six months ended June 30, 2021 by $25.8 million compared to the same period in the prior year. The change in working capital during the six months ended June 30, 2021 was favorable compared to the six months ended June 30, 2020. Cash used to fund working capital was $15.2 million and $53.8 million for the six months ended June 30, 2021 and 2020, respectively.

The decrease in cash generated by operating activities, other than changes in working capital, was lower by $25.8 million as compared to the prior year period primarily due to a decrease in dividends received from affiliated companies offset by a decline in operating profit.

The increase in cash from working capital of $38.6 million as compared to the prior year was primarily due to favorable changes in accrued liabilities, inventories and accounts payable which were partially offset by unfavorable changes in accounts receivable and prepaid and other current assets.

The favorable change in accrued liabilities was driven by a decrease in current income taxes payable and lower interest accruals. The increase in cash provided by inventory changes was due to the timing of sales orders for our polyethylene catalysts in the current year period compared to an inventory build in the prior year period. The favorable change in accounts payable is due to the timing of capital spending and the favorable change in accrued liabilities relates to changes in various expense accruals. The unfavorable change in accounts receivable was driven by the increase in sales within our Ecoservices segment.

Net cash used in investing activities was $70.0 million for the six months ended June 30, 2021, compared to cash used of $19.8 million during the same period in 2020. Cash used in investing activities consisted of utilizing $28.0 million and $22.2 million to fund capital expenditures during the six months ended June 30, 2021 and 2020, respectively. During the six months ended June 30, 2021, we acquired Chem32, LLC for $42.0 million. We received proceeds of $2.4 million related to the sale of non-core assets during the six months ended June 30, 2020.

Net cash used in financing activities was $5.0 million for the six months ended June 30, 2021, compared to net cash used of $6.7 million during the same period in 2020. Net cash used in financing activities was primarily driven by $3.5 million of debt issuance costs related to the 2021 Term Loan Facility and $1.5 million of stock repurchases during the six months ended June 30, 2021. Net cash provided by financing activities was primarily driven by $3.9 million of stock repurchases and $3.0 million of debt issuance costs the six months ended June 30, 2020.

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Debt

	June 30, 2021	December 31, 2020
	(in millions)	
Senior Secured Term Loan Facility due February 2027 (the "2016 Term Loan Facility")[1]	$ 231.4	$ 671.7
Senior Secured Term Loan Facility due February 2027 (the "2020 Term Loan Facility")	—	459.7
Senior Secured Term Loan Facility due June 2028 (the "2021 Term Loan Facility")	900.0	—
5.750% Senior Notes due 2025[1]	295.0	295.0
ABL Facility	—	—
Total debt	1,426.4	1,426.4
Original issue discount	(13.1)	(15.6)
Deferred financing costs	(8.3)	(10.4)
Total debt, net of original issue discount and deferred financing costs	1,404.9	1,400.4
Less: current portion	(9.0)	—
Total long-term debt, excluding current portion	$ 1,395.9	$ 1,400.4

(1) A portion of the net cash proceeds from the closing of the sale of the Performance Chemicals business was used to repay the 2016 Term Loan Facility in full and to redeem all of the 5.750% Senior Notes due 2025.

As of June 30, 2021, our total debt was $1,426.4 million, excluding the original issue discount of $13.1 million and deferred financing fees of $8.3 million for our senior secured credit facilities and notes. Our net debt as of June 30, 2021 was $1,370.6 million, including cash and cash equivalents of $55.8 million. We may seek, subject to market conditions and other factors, opportunities to repurchase, refinance or otherwise reprice our debt.

In June 2021, PQ Corporation (“PQ Corp”), an indirect, wholly owned subsidiary of Ecovyst prior to the closing of the sale of the Performance Chemicals business, and Ecovyst Catalyst Technologies LLC (“Ecovyst LLC” and, following the closing of the sale of the Performance Chemicals business, the “Borrower”), an indirect, wholly owned subsidiary entered into an agreement for a new senior secured term loan facility in an aggregate principal amount of $900.0 million with an original issue discount of 0.25% and interest at a floating rate of LIBOR (with a 0.5% minimum LIBOR floor) plus 2.75% per annum (or, depending on the Borrower’s first lien net leverage ratio, 2.5%). The proceeds were used to pay in full the 2020 Term Loan Facility, partially pay the 2016 Term Loan Facility and pay the associated fees and expenses. The new senior secured term loan facility requires scheduled quarterly amortization payments, each equal to 0.25% of the original principal amount of the loans under the new senior secured term loan facility.

In June 2021, PQ Corp also entered into a third amendment agreement (the “ABL Amendment”), which amended the ABL Credit Agreement, dated as of May 4, 2016 (the “ABL Credit Agreement” and, as amended by the ABL Amendment, the “Amended ABL Credit Agreement”). The ABL Amendment amended the ABL Credit Agreement to, among other things, following the closing of the sale of the Performance Chemicals business, decrease the aggregate amount of revolving loan commitments available to the borrowers thereunder by an aggregate amount of $150.0 million to $100.0 million, consisting of $90.0 million in U.S. commitments and $10.0 million on in European commitments and extended the maturity date with respect to borrowings under the Amended ABL Credit Agreement to August 2, 2026.

Capital Expenditures

Maintenance capital expenditures include spending on maintenance of business, health, safety and environmental initiatives. Growth capital expenditures include spending to drive organic sales growth and cost savings initiatives. These capital expenditures represent our "book" capital expenditures for which the company has recorded, but not necessarily paid for the capital expenditures.

	Six months ended June 30,	
	2021	**2020**
	(in millions)	
Maintenance capital expenditures	$ 19.7	$ 12.1
Growth capital expenditures	4.1	4.0
Total capital expenditures	$ 23.8	$ 16.1

Capital expenditures remained at a level sufficient for required maintenance and certain expansion growth initiatives during these periods. Maintenance capital expenditures were higher in the six months ended June 30, 2021 as compared to the six months ended June 30, 2020 due to higher spending on health and safety. Growth capital expenditures were in-line in the six months ended June 30, 2021 as compared to the six months ended June 30, 2020.

Pension Funding

We did not pay any cash contributions into our defined benefit plans and other postretirement plans during the six months ended June 30, 2021. We paid $0.9 million in cash contributions into our defined benefit pension plans and other post-retirement plans during the six months ended June 30, 2020. The net periodic pension expense was $1.2 million and $0.2 million for those same periods, respectively.

Off–Balance Sheet Arrangements

We had $17.8 million of outstanding letters of credit on our ABL Facility as of June 30, 2021.

Contractual Obligations

Information related to our contractual obligations at December 31, 2020 can be found in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our Annual Report on Form 10-K for the year ended December 31, 2020, filed with the SEC on March 17, 2021, which we refer to as our Annual Report on Form 10-K. During the six months ended June 30, 2021, there have been no significant changes to our contractual obligations as disclosed in our Annual Report on Form 10-K.

Critical Accounting Policies and Estimates

We prepare our condensed consolidated financial statements in conformity with GAAP and our significant accounting policies are described in Note 2 to our audited consolidated financial statements included in our Annual Report on Form 10-K. The preparation of financial statements in conformity with GAAP requires us to make estimates and assumptions that affect reported amounts and related disclosures. We base our estimates and judgments on historical experience and other relevant factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We evaluate our critical accounting estimates, assumptions and judgments on an ongoing basis.

There has been no material change in our critical accounting policies and use of estimates from those described in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," included in our Annual Report on Form 10-K.

Accounting Standards Not Yet Adopted

See Note 2 to our unaudited condensed consolidated financial statements for a discussion of recently issued accounting standards and their effect on us.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Our major market risk exposure is potential losses arising from changing rates and prices regarding foreign currency exchange rate risk, interest rate risk, commodity price risk and credit risk. The audit committee of our board of directors regularly reviews foreign exchange, interest rate and commodity hedging activity and monitors compliance with our hedging policy. We do not use financial instruments for speculative purposes, and we limit our hedging activity to the underlying economic exposure.

There have been no material changes in the foreign exchange risk, interest rate risk, commodity risk or credit risk discussed in Item 7A., "Quantitative and Qualitative Disclosures about Market Risk," included in our Annual Report on Form 10-K. other than the following item:

Foreign Exchange Risk

In March 2021, as a result of the Performance Materials and Performance Chemicals divestitures, we settled our cross-currency swaps. At the date of settlement, the total notional value of the cross-currency swaps was $311.4 million. We paid $13.2 million in cash to settle the swaps, which is included in net cash used in investing activities, discontinued operations in our condensed consolidated statement of cash flows for the six months ended June 30, 2021, as the underlying subsidiary subject to the net investment hedging relationship is part of the Performance Chemicals business.

ITEM 4. CONTROLS AND PROCEDURES.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2021, the end of the period covered by this Quarterly Report on Form 10-Q.

The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("Exchange Act"), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at a reasonable assurance level.

Changes in Internal Control Over Financial Reporting

No changes in our internal control over financial reporting occurred during the quarter ended June 30, 2021 that materially affected, or which are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS.

From time to time we may be subject to various legal claims and proceedings incidental to the normal conduct of business, relating to such matters as personal injury, product liability and warranty claims, waste disposal practices, release of chemicals into the environment and other matters that may arise in the ordinary course of our business. We currently believe that there is no litigation pending that is likely to have a material adverse effect on our business. Regardless of the outcome, legal proceedings can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

ITEM 1A. RISK FACTORS.

"Item 1A, Risk Factors" in our Annual Report on Form 10-K includes a discussion of our risk factors. There have been no material changes from the risk factors described in our Annual Report on Form 10-K.

ITEM 5. OTHER INFORMATION.

The following disclosure is provided in accordance with and in satisfaction of the requirements of Item 5.02 "*Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers*" of Form 8-K.

In connection with the declaration of the special cash dividend declared by the Company's Board further described in this Quarterly Report on Form 10-Q, each holder of the Company's outstanding restricted stock units and stock options as of the record date for the dividend will receive either a dividend equivalent payment upon vesting or a reduction in strike price, subject to applicable tax law limitations.

ITEM 6. EXHIBITS.

The following exhibits are being filed or furnished as part of this Quarterly Report on Form 10-Q:

Exhibit No.	Description
2.1	Amendment No. 1 to Stock Purchase Agreement, dated as of June 24, 2021, by and among PQ Group Holdings Inc. and Sparta Aggregator L. P. (incorporated by reference to Exhibit 2.1 to the Company's Form 8-K, filed on June 30, 2021).
2.2	Amendment No. 2 to Stock Purchase Agreement, dated as of July 12, 2021, by and among PQ Group Holdings Inc. and Sparta Aggregator L. P. (incorporated by reference to Exhibit 2.1 to the Company's Form 8-K, filed on July 15, 2021).
3.1	Second Restated Certificate of Incorporation of PQ Group Holdings Inc. (incorporated by reference to Exhibit 3.1 to the Company's Form 10-Q, filed on November 14, 2017)
3.1	Certificate of Amendment of Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Company's Form 8-K, filed on August 3, 2021)
3.2	Bylaws of Ecovyst Inc. (incorporated by reference to Exhibit 3.2 to the Company's Form 8-K, filed on August 3, 2021)
10.1	Term Loan Credit Agreement, dated as of June 9, 2021 among CPQ Midco I Corporation, PQ Corporation, Ecovyst Catalyst Technologies LLC, Eco Services Operations Corp., Credit Suisse AG, Cayman Islands Branch, as administrative agent and collateral agent, and the lenders from time to time party thereto, with Citibank, N.A., Credit Suisse Loan Funding LLC, BofA Securities, Inc., Deutsche Bank Securities Inc., Goldman Sachs Bank USA, KeyBanc Capital Markets Inc. and Truist Securities, Inc., as Joint Lead Arrangers and Joint Bookrunners (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K , filed on June 11, 2021).
10.2	Third Amendment Agreement, dated as of June 9, 2021, to the ABL Credit Agreement, dated as of May 4, 2016, by and among PQ Corporation, CPQ Midco I Corporation, the Canadian Borrowers from time to time party thereto, the European Borrowers from time to time party thereto, the Lenders from time to time party thereto and Citibank, N.A., as Administrative Agent and Issuing Bank, with Citigroup Global Markets Inc., Credit Suisse Loan Funding LLC, Bank of America, N.A., Deutsche Bank Securities Inc., Goldman Sachs Bank USA, KeyBanc Capital Markets Inc. and Truist Securities, Inc., as Joint Lead Arrangers and Joint Bookrunners (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K , filed on June 11, 2021)
10.3	Amendment to Form of Director and Officer Indemnification Agreement
10.4	Form of Ecovyst Inc. Director and Officer Indemnification Agreement
31.1	Certification of Chief Executive Officer of Ecovyst Inc. pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer of Ecovyst Inc. pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1	Certification of Chief Executive Officer of Ecovyst Inc. 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 of Ecovyst Inc. pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101	The following materials from the Quarterly Report on Form 10-Q of Ecovyst Inc. for the quarter ended June 30, 2021, formatted in Inline XBRL: (i) Condensed Consolidated Statements of Income, (ii) Condensed Consolidated Statements of Comprehensive Income, (iii) Condensed Consolidated Balance Sheets, (iv) Condensed Consolidated Statements of Stockholders' Equity, (v) Condensed Consolidated Statements of Cash Flows, (vi) Notes to Condensed Consolidated Financial Statements and (vii) document and entity information, tagged as blocks of text and including detailed tags
104	The cover page from the Quarterly Report on Form 10-Q of Ecovyst Inc. for the quarter ended June 30, 2021, formatted in Inline XBRL and included as Exhibit 101

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 thereunto duly authorized.

Ecovyst Inc.

Date:	August 9, 2021	By:	/s/ MICHAEL FEEHAN
			Michael Feehan
			Vice President and Chief Financial Officer
			(Duly Authorized Officer and Principal Financial and Accounting Officer)

Exhibit 10.3

AMENDMENT TO INDEMNIFICATION AGREEMENT

THIS AMENDMENT TO INDEMNIFICATION AGREEMENT ("Amendment"), dated this 1st day of August 2021, is made and entered into by and among PQ Group Holdings Inc., a Delaware corporation (the "Company"), PQ Holdings Inc., a Delaware corporation, CPQ Midco I Corporation, a Delaware corporation (together with PQ Holdings Inc., the "Intermediate Holdcos"), PQ Corporation, a Pennsylvania corporation ("Opco"), Eco Services Operations Corp., a Delaware corporation ('Eco", and together with the Company, the Intermediate Holdcos, and Opco, the "Indemnitor Companies"), Ecovyst Catalyst Technologies LLC, a Delaware limited liability company ("Ecovyst"), and [NAME OF INDEMNITEE] ("Indemnitee").

WHEREAS, the Indemnitor Companies and Indemnitee entered into that certain Indemnification Agreement, dated as of September 28, 2017, as amended (the "Indemnification Agreement");

WHEREAS, in connection with that certain Stock Purchase Agreement, dated February 28, 2021, by and between the Company and Sparta Aggregator L.P. (the "SPA"), the Indemnitor Companies, Ecovyst and Indemnitee now desire to amend the Indemnification Agreement as set forth herein; and

WHEREAS, pursuant to Section 18 of the Indemnification Agreement, the amendments contemplated by the Indemnitor Companies, Ecovyst, and Indemnitee must be contained in a written agreement signed by all parties to the Indemnification Agreement.

NOW, THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties, intending to be bound as set forth herein, agree as follows:

1. Definitions. Capitalized terms used and not defined in this Amendment have the respective meanings assigned to them in the Indemnification Agreement.

2. Replacement of Defined Terms. The defined terms PQ Company, PQ Companies, PQ Entity, and PQ Entities in the Indemnification Agreement are hereby replaced in each instance with the terms "Ecovyst Company", "Ecovyst Companies", "Ecovyst Entity", and "Ecovyst Entities", respectively.

3. Addition of Ecovyst as a Party to the Indemnification Agreement Ecovsyt is hereby added as a party to the Indemnification Agreement and assumes all of the rights and obligations of an Ecovyst Company under the Indemnification Agreement (as amended in accordance with Section 2 hereof).

4. Removal of Opco as a Party to the Indemnification Agreement Contingent Upon the Closing

(a) Effective as of the Closing (as defined in the SPA), without any further action on the part of any party hereto, the Indemnification Agreement shall be amended by removing Opco as a party thereto and, for the avoidance of doubt, Opco shall have no rights, benefits, liabilities or obligations under the Indemnification Agreement, whether to (i) the Indemnitee or (ii) the Company, the Intermediate Holdcos, Eco and/or Ecovyst (collectively, the "Remaining Indemnitors"). Further, the Remaining Indemnitors and Indemnitee each agree that, effective automatically upon the Closing, without any further action on the part of any party hereto, Opco shall be released and discharged from any and all liabilities or obligations under the Indemnification Agreement. In connection with the release and discharge of Opco provided for in this Section 4(a), the Remaining Indemnitors agree that Indemnitee may seek to enforce the Indemnification Agreement solely and exclusively against the Remaining Indemnitors and not against Opco, and the Indemnitee agrees that he or she shall not seek to enforce the Indemnification Agreement against Opco and shall seek to enforce the Indemnification Agreement only against the Remaining Indemnitors.

(b) Notwithstanding anything to the contrary set forth in this Amendment, the parties hereto acknowledge and agree that the effectiveness of Section 4 of this Amendment is contingent upon the Closing and that Section 4 of this Amendment shall automatically be null, void and of no force and effect in the event that the SPA is terminated prior to the Closing in accordance with Section 10.1 of the SPA.

5. Confirmation; Full Force and Effect. The Remaining Indemnitors and Indemnitee each acknowledge and agree that the removal of Opco from the Indemnification Agreement shall have no effect on their respective liabilities or obligations thereunder except as specifically set forth herein. In addition, the Indemnification Agreement, as amended hereby, shall remain binding upon each of the parties thereto and shall remain in full force and effect in accordance with its

terms. Each of the Remaining Indemnitors and Indemnitee expressly ratifies and reaffirms their respective obligations under the Indemnification Agreement as amended hereby.

6. Insurance Not Affected. For the avoidance of doubt, the parties hereto agree that nothing in this Amendment is intended to, or shall, affect the rights of Indemnitee under any applicable director and officer liability insurance policy maintained by any Ecovyst Company.

7. Entire Agreement. The Indemnification Agreement, as amended hereby, constitutes the entire understanding agreement among the parties with respect to the subject matter hereof and supersedes any prior written or oral agreements or understandings of the parties hereto with respect to such matter.

8. Counterparts. This Amendment may be executed in counterparts, each of which is deemed an original, but all of which constitute one and the same agreement. Delivery of an executed counterpart of this Amendment electronically or by facsimile shall be effective as delivery of an original executed counterpart of this Amendment.

9. Governing Law. This Amendment shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules.

[Remainder of the Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

The Company:

PQ GROUP HOLDINGS INC.
By: ___________________________________
Name: Joseph S. Koscinski
Title: Vice President and General Counsel

Intermediate Holdcos:

PQ HOLDINGS INC.
By: ___________________________________
Name: Joseph S. Koscinski
Title: Vice President and General Counsel

CPQ MIDCO I CORPORATION
By: ___________________________________
Name: Joseph S. Koscinski
Title: Vice President

Opco:

PQ CORPORATION
By: ___________________________________
Name: Joseph S. Koscinski
Title: Vice President and General Counsel

Eco:

ECO SERVICES OPERATIONS CORP.
By: ___________________________________
Name: Joseph S. Koscinski
Title: Vice President and General Counsel

Ecovyst:

ECOVYST CATALYST TECHNOLOGIES LLC
By: ___________________________________
Name: Joseph S. Koscinski
Title: Vice President and General Counsel

Indemnitee:

____
Name: [NAME OF INDEMNITEE]

Exhibit 10.4

INDEMNIFICATION AGREEMENT

This Indemnification Agreement ("Agreement") is made and entered into as of [●] by and among Ecovyst Inc., a Delaware corporation (the "Company"), Ecovyst Holdings Inc., a Delaware corporation, Ecovyst Midco I Inc., a Delaware corporation, Ecovyst Midco II Inc. (together with Ecovyst Holdings Inc. and Ecovyst Midco I Inc., the "Intermediate Holdcos"), Ecovyst Catalyst Technologies LLC, a Delaware limited liability company ("Opco"), Eco Services Operations Corp., a Delaware corporation ("Eco", and together with the Company, the Intermediate Holdcos, and Opco, the "Ecovyst Companies" and each an "Ecovyst Company"), and [●] ("Indemnitee").

WHEREAS, in light of the litigation costs and risks to directors and officers resulting from their service to companies, and the desire of the Ecovyst Companies to attract and retain qualified individuals to serve as directors and officers, it is reasonable, prudent and necessary for each of the Ecovyst Companies to indemnify and advance expenses on behalf of its and the other Ecovyst Companies' directors and officers to the fullest extent permitted under Applicable Law so that they will serve or continue to serve the Ecovyst Companies free from undue concern regarding such risks;

WHEREAS, the Ecovyst Companies have requested that Indemnitee serve or continue to serve as a director and/or an officer of one or more of the Ecovyst Companies and may have requested or may in the future request that Indemnitee serve one or more Ecovyst Entities (as hereinafter defined) as a director or an officer or in other capacities;

WHEREAS, one of the conditions that Indemnitee requires in order to serve as a director and/or an officer of one or more of the Ecovyst Companies is that Indemnitee be so indemnified; and

WHEREAS, Indemnitee may have certain rights to indemnification, advancement of expenses and/or insurance provided by one or more of the Designating Stockholders (as hereinafter defined) (or their affiliates) and/or any insurer providing insurance coverage under any policy purchased or maintained by such Designating Stockholders (or their affiliates), which Indemnitee, the Ecovyst Companies and the Designating Stockholders (or their affiliates) intend to be secondary to the primary obligation of the Ecovyst Companies to indemnify Indemnitee as provided herein, with the Ecovyst Companies' acknowledgement of and agreement to the foregoing being a material condition to Indemnitee's willingness to serve as a director and/or officer of one or more of the Ecovyst Companies.

NOW, THEREFORE, in consideration of the premises and the covenants contained herein, the Ecovyst Companies and Indemnitee do hereby covenant and agree as follows:

1. Services by Indemnitee. Indemnitee agrees to serve as a director and/or an officer of one or more of the Ecovyst Companies. Indemnitee may at any time and for any reason resign from such position (subject to any contractual obligation the Indemnitee may have under any other agreement).

2. Indemnification - General. On the terms and subject to the conditions of this Agreement, the Ecovyst Companies shall, to the fullest extent permitted under Applicable Law, indemnify Indemnitee with respect to, and hold Indemnitee harmless from and against, all losses, damages, liabilities, judgments, fines, penalties, costs, amounts paid in settlement, Expenses (as hereinafter defined) and other amounts that Indemnitee reasonably incurs and that result from, arise in connection with or are by reason of Indemnitee's Corporate Status (as hereinafter defined), including all interest, assessments and other charges paid or payable in connection therewith, and shall advance Expenses to Indemnitee. The obligations of the Ecovyst Companies under this Agreement (a) are joint and several obligations of each Ecovyst Company, (b) shall continue after such time as Indemnitee ceases to serve as a director or an officer of the Ecovyst Companies or in any other Corporate Status and (c) include, without limitation, claims for monetary damages against Indemnitee in respect of any actual or alleged liability or other loss of Indemnitee, to the fullest extent permitted under Applicable Law. A limitation under law of any Ecovyst Company on providing indemnification or an advance of expenses to Indemnitee shall not limit the indemnification and advancement obligations of any Ecovyst Company not so limited.

3. Proceedings Other Than Proceedings by or in the Right of the Ecovyst Companies. If in connection with or by reason of Indemnitee's Corporate Status, Indemnitee was, is, or is threatened to be made, a party to or a participant in any Proceeding (as hereinafter defined) other than a Proceeding by or in the right of any of the Ecovyst Companies to procure a judgment in its favor, the Ecovyst Companies shall, to the fullest extent permitted under Applicable Law, indemnify Indemnitee with respect to, and hold Indemnitee harmless from and against, all losses, damages, liabilities, judgments, fines, penalties, costs, amounts paid in settlement, Expenses and other amounts that Indemnitee reasonably incurs in connection with such Proceeding or any claim, issue or matter therein, including all interest, assessments and other charges paid or payable in connection therewith.

4. Proceedings by or in the Right of the Ecovyst Companies. If in connection with or by reason of Indemnitee's Corporate Status, Indemnitee was, is, or is threatened to be made, a party to or a participant in any Proceeding by or in the right of any of the Ecovyst Companies to procure a judgment in such Ecovyst Company's favor, the Ecovyst Companies shall, to the fullest extent permitted under Applicable Law, indemnify Indemnitee with respect to, and hold Indemnitee harmless from and against, all Expenses reasonably incurred by Indemnitee or on behalf of Indemnitee in connection with such Proceeding or any claim, issue or matter therein.

5. Mandatory Indemnification in Case of Successful Defense. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee is, by reason of Indemnitee's Corporate Status, a party to (or a participant in) and is successful, on the merits or otherwise, in defense of any Proceeding (including, without limitation, any Proceeding brought by or in the right of any Ecovyst Company), the Ecovyst Companies shall, to the fullest extent permitted under Applicable Law, indemnify Indemnitee with respect to, and hold Indemnitee harmless from and against, all Expenses reasonably incurred by Indemnitee or on behalf of Indemnitee in connection therewith. If Indemnitee is not wholly successful in defense of such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the Ecovyst Companies shall, to the fullest extent permitted under Applicable Law, indemnify Indemnitee against all Expenses reasonably incurred by Indemnitee or on behalf of Indemnitee in connection with each successfully resolved claim, issue or matter. For purposes of this Section 5 and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, on substantive or procedural grounds, or settlement of any such claim prior to a final judgment by a court of competent jurisdiction with respect to such Proceeding, shall be deemed to be a successful result as to such claim, issue or matter; provided, however, that any settlement of any claim, issue or matter in such a Proceeding shall not be deemed to be a successful result as to such claim, issue or matter if such settlement is effected by Indemnitee without the Ecovyst Companies' prior written consent, which consent shall not be unreasonably withheld, delayed or conditioned.

6. Partial Indemnification. If Indemnitee is entitled under any provision of this Agreement or otherwise to indemnification by any of the Ecovyst Companies for some or a portion of the losses, damages, liabilities, judgments, fines, penalties, costs, amounts paid in settlement, and Expenses, including all interest, assessments and other charges paid or payable in connection therewith, incurred by Indemnitee or on behalf of Indemnitee in connection with a Proceeding or any claim, issue or matter therein, in whole or in part, the Ecovyst Companies shall, to the fullest extent permitted under Applicable Law, indemnify Indemnitee to the fullest extent to which Indemnitee is entitled to such indemnification.

7. Indemnification for Additional Expenses Incurred to Secure Recovery or as Witness.

(a) The Ecovyst Companies shall, to the fullest extent permitted under Applicable Law, indemnify Indemnitee with respect to, and hold Indemnitee harmless from and against, any and all Expenses and, if requested by Indemnitee, shall advance on an as-incurred basis (as provided in Section 8 of this Agreement) such Expenses to Indemnitee, which are incurred by Indemnitee in connection with any action or proceeding or part thereof brought by Indemnitee for (i) indemnification or advance payment of Expenses by the Ecovyst Companies under this Agreement, any other agreement, the Certificate of Incorporation, By-laws, limited liability company agreement or other governing document of the applicable Ecovyst Company as now or hereafter in effect; or (ii) recovery under any director and officer liability insurance policy maintained by any Ecovyst Entity.

(b) To the extent that Indemnitee is, by reason of Indemnitee's Corporate Status, a witness (or is forced or asked to respond to discovery requests) in any Proceeding to which Indemnitee is not a party, the Ecovyst Companies shall, to the fullest extent permitted under Applicable Law, indemnify Indemnitee with respect to, and hold Indemnitee harmless from and against, and the Ecovyst Companies shall advance on an as-incurred basis (as provided in Section 8 of this Agreement), all Expenses reasonably incurred by Indemnitee or on behalf of Indemnitee in connection therewith.

8. Advancement of Expenses. The Ecovyst Companies shall, to the fullest extent permitted under Applicable Law, pay on a current and as-incurred basis all Expenses incurred by Indemnitee in connection with any Proceeding in any way connected with, resulting from or relating to Indemnitee's Corporate Status. Such Expenses shall be paid in advance of the final disposition of such Proceeding, without regard to whether Indemnitee will ultimately be entitled to be indemnified for such Expenses and without regard to whether an Adverse Determination (as hereinafter defined) has been or may be made. Upon submission of a request for advancement of Expenses pursuant to Section 9(c) of this Agreement, Indemnitee shall be entitled to advancement of Expenses as provided in this Section 8, and such advancement of Expenses shall continue until such time (if any) as there is a final non-appealable judicial determination that Indemnitee is not entitled to indemnification. Indemnitee shall repay such amounts advanced if and to the extent that it shall ultimately be determined in a decision by a court of competent jurisdiction from which no appeal can be taken that Indemnitee is not entitled to be indemnified by the Ecovyst Companies for such Expenses. Such repayment obligation shall be unsecured and shall not bear interest. The Ecovyst Companies shall not impose on Indemnitee additional conditions to advancement or require from Indemnitee

additional undertakings regarding repayment. Indemnitee shall, in all events, be entitled to advancement of Expenses, without regard to Indemnitee's ultimate entitlement to indemnification, until the final determination of the Proceeding.

9. Indemnification Procedures.

(a) Notice of Proceeding. Indemnitee agrees to notify the Ecovyst Companies promptly upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter which may be subject to indemnification or advancement of Expenses hereunder. Any failure by Indemnitee to notify any Ecovyst Company will not relieve the Ecovyst Companies of their advancement or indemnification obligations under this Agreement unless, and only to the extent that, the Ecovyst Companies can establish that such omission to notify resulted in actual and material prejudice to them, which prejudice cannot be reversed or otherwise eliminated without any material negative effect on the Ecovyst Companies, and the omission to notify the Ecovyst Companies will, in any event, not relieve any Ecovyst Company from any liability which it may have to indemnify Indemnitee otherwise than under this Agreement. If, at the time of receipt of any such notice, the Ecovyst Companies have director and officer liability insurance policies in effect, the Ecovyst Companies will promptly notify the relevant insurers in accordance with the procedures and requirements of such policies.

(b) Defense; Settlement. Indemnitee shall have the sole right and obligation to control the defense or conduct of any claim or Proceeding with respect to Indemnitee. The Ecovyst Companies shall not, without the prior written consent of Indemnitee, which may be provided or withheld in Indemnitee's sole discretion, effect any settlement of any Proceeding against Indemnitee or which, in the reasonable opinion of Independent Counsel (as hereinafter defined), could have been brought against Indemnitee or which potentially or actually imposes any cost, liability, exposure or burden on Indemnitee unless (i) such settlement solely involves the payment of money or performance of any obligation by persons other than Indemnitee and includes an unconditional, full release of Indemnitee by all relevant parties from all liability on any matters that are the subject of such Proceeding and an acknowledgment that Indemnitee denies all wrongdoing in connection with such matters and (ii) the Ecovyst Companies have fully indemnified the Indemnitee with respect to, and held Indemnitee harmless from and against, all Expenses and other amounts incurred by Indemnitee or on behalf of Indemnitee in connection with such Proceeding. The Ecovyst Companies shall not be obligated to indemnify Indemnitee against amounts paid in settlement of a Proceeding against Indemnitee if such settlement is effected by Indemnitee without the Ecovyst Companies' prior written consent, which consent shall not be unreasonably withheld, delayed or conditioned, unless such settlement solely involves the payment of money or performance of any obligation by persons other than the Ecovyst Companies and includes an unconditional release of the Ecovyst Companies by any party to such Proceeding other than the Indemnitee from all liability on any matters that are the subject of such Proceeding and an acknowledgment that the Ecovyst Companies deny all wrongdoing in connection with such matters.

(c) Request for Advancement; Request for Indemnification.

(i) To obtain advancement of Expenses under this Agreement, Indemnitee shall submit to the Ecovyst Companies a written request therefor, together with such invoices or other supporting information as may be reasonably requested by the Ecovyst Companies and reasonably available to Indemnitee, and an unsecured written undertaking to repay amounts advanced only to the extent that it is ultimately determined that Indemnitee is not entitled to be indemnified by any of the Ecovyst Companies. The Ecovyst Companies shall make advance payment of Expenses to Indemnitee no later than five (5) business days after receipt of the written request for advancement (and each subsequent request for advancement) by Indemnitee. If, at the time of receipt of any such written request for advancement of Expenses, the Ecovyst Companies have director and officer insurance policies in effect, the Ecovyst Companies shall promptly notify the relevant insurers in accordance with the procedures and requirements of such policies. The Ecovyst Companies shall thereafter keep such director and officer insurers informed of the status of the Proceeding or other claim (with assistance from the Indemnitee as reasonably required) and take such other actions, as appropriate to secure coverage of Indemnitee for such claim.

(ii) To obtain indemnification under this Agreement, at any time before or after submission of a request for advancement pursuant to Section 9(c)(i) of this Agreement, Indemnitee may submit a written request for indemnification hereunder. The time at which Indemnitee submits a written request for indemnification shall be determined by the Indemnitee in the Indemnitee's sole discretion. Once Indemnitee submits such a written request for indemnification (and only at such time that Indemnitee submits such a written request for indemnification), a Determination (as hereinafter defined) shall thereafter be made, as provided in and only to the extent required by Section 9(d) of this Agreement. In no event shall a Determination be made, or required to be made, as a condition to or otherwise in connection with any advancement of Expenses pursuant to Section 8 and Section 9(c)(i) of this Agreement. If, at the time of receipt of any such request for indemnification, the Ecovyst Companies have director and officer insurance policies in effect, the Ecovyst Companies shall promptly notify the relevant insurers and take such other actions as necessary or appropriate to secure coverage of Indemnitee for such claim in accordance with the procedures and requirements of such policies.

(d) Determination. The Ecovyst Companies agree that Indemnitee shall be indemnified to the fullest extent permitted under Applicable Law and that no Determination shall be required in connection with such indemnification unless specifically required by Applicable Law which cannot be waived. In no event shall a Determination be required in connection with indemnification for Expenses pursuant to Section 7 of this Agreement or incurred in connection with any Proceeding or portion thereof with respect to which Indemnitee has been successful on the merits or otherwise. Any decision that a Determination is required by Applicable Law in connection with any other indemnification of Indemnitee, and any such Determination, shall be made within twenty (20) days after receipt of Indemnitee's written request for indemnification pursuant to Section 9(c)(ii) of this Agreement and such Determination shall be made either (i) by the Disinterested Directors (as hereinafter defined), even though less than a quorum, so long as Indemnitee does not request that such Determination be made by Independent Counsel (as hereinafter defined), or (ii) if so requested by Indemnitee, in Indemnitee's sole discretion, by Independent Counsel in a written opinion to the Ecovyst Companies and Indemnitee. If a Determination is made that Indemnitee is entitled to indemnification, payment to Indemnitee shall be made within five (5) business days after such Determination. Indemnitee shall reasonably cooperate with the person, persons or entity making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such Determination. Any Expenses incurred by Indemnitee in so cooperating with the Disinterested Directors or Independent Counsel, as the case may be, making such determination shall be advanced and borne by the Ecovyst Companies (irrespective of the Determination as to Indemnitee's entitlement to indemnification) and each Ecovyst Company is liable to indemnify and hold Indemnitee harmless therefrom. If the person, persons or entity empowered or selected under this Section 9(d) to determine whether Indemnitee is entitled to indemnification shall not have made a determination within twenty (20) days after receipt by the Ecovyst Companies of the request therefor, the requisite determination of entitlement to indemnification shall, to the fullest extent not prohibited by Applicable Law, be deemed to have been made and Indemnitee shall be entitled to such indemnification, absent (i) a misstatement by Indemnitee of a material fact or an omission of a material fact necessary to make Indemnitee's statement not materially misleading in connection with the request for indemnification that actually prejudices the Ecovyst Companies, or (ii) a prohibition of such indemnification under Applicable Law; provided, however, that such twenty (20) day period may be extended for a reasonable time, not to exceed an additional twenty (20) days, if the person, persons or entity making the determination with respect to entitlement to indemnification in good faith requires such additional time for the obtaining or evaluating of documentation and/or information relating thereto; and provided, further, that the foregoing provisions of this Section 9(d) shall not apply if the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 9(e) of this Agreement.

(e) Independent Counsel. In the event Indemnitee requests that the Determination be made by Independent Counsel pursuant to Section 9(d) of this Agreement, the Independent Counsel shall be selected as provided in this Section 9(e). The Independent Counsel shall be selected by Indemnitee (unless Indemnitee shall request that such selection be made by the Board of Directors, in which event the Board of Directors shall make such selection on behalf of the Ecovyst Companies, subject to the remaining provisions of this Section 9(e)), and Indemnitee or the Ecovyst Companies, as the case may be, shall give written notice to the other, advising the Ecovyst Companies or Indemnitee of the identity of the Independent Counsel so selected. The Ecovyst Companies or Indemnitee, as the case may be, may, within five (5) days after such written notice of selection shall have been received, deliver to Indemnitee or the Ecovyst Companies, as the case may be, a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 15 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If a written objection is so made and substantiated, the Independent Counsel so selected may not serve as Independent Counsel unless and until such objection is withdrawn or a court of competent jurisdiction has determined that such objection is without merit. If, within ten (10) days after submission by Indemnitee of a written request for indemnification pursuant to Section 9(c)(ii) of this Agreement and after a request for the appointment of Independent Counsel has been made, no Independent Counsel shall have been selected and not objected to, either the Ecovyst Companies or Indemnitee may petition a court of competent jurisdiction for resolution of any objection which shall have been made by the Ecovyst Companies or Indemnitee to the other's selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 9(d) of this Agreement. Upon the due commencement of any judicial proceeding or arbitration pursuant to Section 9(f) of this Agreement, Independent Counsel shall be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing). Any expenses incurred by or in connection with the appointment of Independent Counsel shall be borne by the Ecovyst Companies (irrespective of the Determination of Indemnitee's entitlement to indemnification) and not by Indemnitee.

(f) Consequences of Determination; Remedies of Indemnitee. The Ecovyst Companies shall be bound by and shall have no right to challenge a Favorable Determination. If an Adverse Determination is made, or if for any other reason the Ecovyst Companies do not make timely indemnification payments or advances of Expenses, Indemnitee shall have the right to commence a Proceeding before a court of competent jurisdiction to challenge such Adverse Determination and/or to require the Ecovyst Companies to make such payments or advances (and the Company shall have the right to defend its position in such Proceeding and to appeal any adverse judgment in such Proceeding). Indemnitee shall be entitled to be indemnified for all Expenses incurred in connection with such a Proceeding and to have such Expenses advanced by the Company in accordance with Section 8 of this Agreement. If Indemnitee fails to challenge an Adverse Determination within twenty (20) business days, or if Indemnitee challenges an Adverse Determination and such Adverse Determination has been upheld by a final judgment of a court of competent jurisdiction from which no appeal can be taken, then, to the extent and only to the extent required by such Adverse Determination or final judgment, the Ecovyst Companies shall not be obligated to indemnify Indemnitee under this Agreement.

(g) Presumptions; Burden and Standard of Proof. The parties intend and agree that, to the extent permitted under Applicable Law, in connection with any Determination with respect to Indemnitee's entitlement to indemnification hereunder by any person, including a court:

(i) it will be presumed that Indemnitee is entitled to indemnification under this Agreement (notwithstanding any Adverse Determination), and the Ecovyst Entities or any other person or entity challenging such right will have the burden of proof to overcome that presumption in connection with the making by any person, persons or entity of any determination contrary to that presumption;

(ii) the termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption that Indemnitee did not act in good faith and in a manner which Indemnitee reasonably believed to be in or not opposed to the best interests of the applicable Ecovyst Entity, and, with respect to any criminal action or proceeding, had reasonable cause to believe that Indemnitee's conduct was unlawful;

(iii) Indemnitee will be deemed to have acted in good faith if Indemnitee's action is based on the records or books of account of the applicable Ecovyst Entity, including financial statements, or on information supplied to Indemnitee by the officers, employees or committees of the board of directors of the applicable Ecovyst Entity, or on the advice of legal counsel or other advisors (including financial advisors and accountants) for the applicable Ecovyst Entity or on information or records given in reports made to the applicable Ecovyst Entity by an independent certified public accountant or by an appraiser or other expert or advisor selected by the applicable Ecovyst Entity; and

(iv) the knowledge and/or actions, or failure to act, of any director, officer, agent or employee of any of the Ecovyst Entities or relevant enterprises will not be imputed to Indemnitee in a manner that limits or otherwise adversely affects Indemnitee's rights hereunder.

The provisions of this Section 9(g) shall not be deemed to be exclusive or to limit in any way the other circumstances in which Indemnitee may be deemed to have met the applicable standard of conduct set forth in this Agreement.

10. Remedies of Indemnitee.

(a) In the event that (i) a determination is made pursuant to Section 9(d) of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 8 and Section 9(c)(i) of this Agreement, (iii) no determination of entitlement to indemnification shall have been made pursuant to Section 9(d) of this Agreement within twenty (20) days after receipt by the Ecovyst Companies of the request for indemnification, (iv) payment of indemnification is not made pursuant to Section 5, 6 or 7 of this Agreement within five (5) business days after receipt by the Ecovyst Companies of a written request therefor, (v) payment of indemnification pursuant to Section 3, 4 or 7 of this Agreement is not made within five (5) business days after a determination has been made that Indemnitee is entitled to indemnification or (vi) the Ecovyst Companies or any other person takes or threatens to take any action to declare this Agreement void or unenforceable, or institutes any litigation or other action or Proceeding designed to deny, or to recover from, the Indemnitee the benefits provided or intended to be provided to the Indemnitee hereunder, Indemnitee shall be entitled to an adjudication by a court of his entitlement to such indemnification or advancement of Expenses. Alternatively, Indemnitee, at his option, may seek an award in arbitration to be conducted by a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association. The Ecovyst Companies shall not oppose Indemnitee's right to seek any such adjudication or award in arbitration.

(b) In the event that a determination shall have been made pursuant to Section 9(d) of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding or arbitration commenced pursuant to this Section 10 shall be conducted in all respects as a de novo trial, or arbitration, on the merits, in which (i) Indemnitee shall not be prejudiced by reason of that adverse determination, and (ii) the Ecovyst Companies shall bear the burden of establishing that Indemnitee is not entitled to indemnification.

(c) If a determination shall have been made pursuant to Section 9(d) of this Agreement that Indemnitee is entitled to indemnification, the Ecovyst Companies shall be bound by such determination in any judicial proceeding or arbitration commenced pursuant to this Section 10, absent (i) a misstatement by Indemnitee of a material fact or an omission of a material fact necessary to make Indemnitee's statement not materially misleading in connection with the request for indemnification that actually prejudices the Ecovyst Companies, or (ii) a prohibition of such indemnification under Applicable Law.

(d) The Ecovyst Companies shall, to the fullest extent not prohibited by Applicable Law, be precluded from asserting in any judicial proceeding or arbitration commenced pursuant to this Section 10 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court or before any such arbitrator that the Ecovyst Companies are bound by all the provisions of this Agreement.

11. Insurance; Subrogation; Other Rights of Recovery, etc.

(a) Each Ecovyst Company shall use its reasonable best efforts to purchase and maintain a policy or policies of insurance with reputable insurance companies with A.M. Best ratings of "A" or better, providing Indemnitee with coverage for any liability asserted against, and incurred by, Indemnitee or on Indemnitee's behalf by reason of Indemnitee's Corporate Status, or arising out of Indemnitee's status as such, whether or not any such Ecovyst Company would have the power to indemnify Indemnitee against such liability. Such insurance policies shall have coverage terms and policy limits at least as favorable to Indemnitee as the insurance coverage provided to any other director or officer of the Ecovyst Companies. If any Ecovyst Company has such insurance in effect at the time it receives from Indemnitee any notice of the commencement of an action, suit, proceeding or other claim, such Ecovyst Company shall give prompt notice of the commencement of such action, suit, proceeding or other claim to the insurers and take such other actions in accordance with the procedures set forth in the policy as required or appropriate to secure coverage of Indemnitee for such action, suit, proceeding or other claim. Such Ecovyst Company shall thereafter take all necessary or desirable action to cause such insurers to pay, on behalf of Indemnitee, all amounts payable as a result of such action, suit, proceeding or other claim in accordance with the terms of such policy. Such Ecovyst Company shall continue to provide such insurance coverage to Indemnitee for a period of at least ten (10) years after Indemnitee ceases to serve as a director or an officer or in any other Corporate Status.

(b) In the event of any payment by any Ecovyst Company under this Agreement, such Ecovyst Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee against any other Ecovyst Entity, and Indemnitee hereby agrees, as a condition to obtaining any advancement or indemnification from the Ecovyst Companies, to assign to such Ecovyst Company all of Indemnitee's rights to obtain from such other Ecovyst Entity such amounts to the extent that they have been paid by such Ecovyst Company to or for the benefit of Indemnitee as advancement or indemnification under this Agreement and are adequate to indemnify Indemnitee with respect to the costs, Expenses or other items to the full extent that Indemnitee is entitled to indemnification or other payment hereunder; and Indemnitee will (upon request by the Ecovyst Companies) execute all papers required and use reasonable best efforts to take all action reasonably necessary to secure such rights, including execution of such documents as are necessary to enable such Ecovyst Company to bring suit or enforce such rights.

(c) Each of the Ecovyst Companies hereby unconditionally and irrevocably waives, relinquishes and releases, and covenants and agrees not to exercise (and to cause each of the other Ecovyst Entities not to exercise), any rights that such Ecovyst Company may now have or hereafter acquire against any Designating Stockholder (or former Designating Stockholder), insurer of such Designating Stockholder (or former Designating Stockholder) or Indemnitee that arise from or relate to the existence, payment, performance or enforcement of the Ecovyst Companies' obligations under this Agreement or under any other indemnification agreement (whether pursuant to contract, by-laws or charter) with any person or entity, including, without limitation, any right of subrogation (whether pursuant to contract or common law), reimbursement, exoneration, contribution or indemnification, or to be held harmless, and any right to participate in any claim or remedy of Indemnitee against any Designating Stockholder (or former Designating Stockholder) or Indemnitee, whether or not such claim, remedy or right arises in equity or under contract, statute or common law, including, without limitation, the right to take or receive from any Designating Stockholder (or former Designating Stockholder), insurer of such Designating Stockholder (or former Designating Stockholder) or Indemnitee, directly or indirectly, in cash or other property or by set-off or in any other manner, payment or security on account of such claim, remedy or right.

(d) The Ecovyst Companies shall not be liable to pay or advance to Indemnitee any amounts otherwise indemnifiable under this Agreement or under any other indemnification agreement if, and to the extent that, Indemnitee has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise; provided, however, that (i) the Ecovyst Companies hereby agree that they are the indemnitors of first resort under this Agreement and under any other indemnification agreement (i.e., their obligations to Indemnitee under this Agreement or any other agreement or undertaking to provide advancement and/or indemnification to Indemnitee are primary and any obligation of any Designating Stockholder (or any affiliate thereof other than any Ecovyst Entity) and/or any obligation of any insurer providing insurance coverage under any policy purchased or maintained by such Designating Stockholders (or by any affiliate thereof, other than any Ecovyst Entity) to provide advancement or indemnification for the same Expenses, liabilities, judgments, penalties, fines and amounts paid in settlement (including all interest, assessments and other charges paid or payable in connection with or in respect of such Expenses, liabilities, judgments, penalties, fines and amounts paid in settlement) incurred by Indemnitee are secondary, (ii) the Ecovyst Companies shall be required to advance the full amount of expenses incurred by any such Indemnitee and shall be liable for the full amount of all liability and loss suffered by such Indemnitee (including, but not limited to, Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by such Indemnitee in connection with such Proceeding), without regard to any rights any such Indemnitee may have against any Designating Stockholder or against any insurance carrier providing insurance coverage to Indemnitee under any insurance policy issued to a Designating Stockholder and (iii) if any Designating Stockholder (or any affiliate thereof other than any Ecovyst Entity) pays or causes to be paid, for any reason, any amounts otherwise indemnifiable hereunder or under any other indemnification agreement (whether pursuant to contract, by-laws or charter) with Indemnitee, then (x) such Designating Stockholder (or such affiliate, as the case may be) shall be fully subrogated to all rights of Indemnitee with respect to such payment and (y) the Ecovyst Companies shall fully indemnify, reimburse and hold harmless such Designating Stockholder (or such other affiliate) for all such payments actually made by such Designating Stockholder (or such other affiliate).

(e) The Ecovyst Companies' obligation to indemnify or advance Expenses hereunder to Indemnitee in respect of or relating to Indemnitee's service at the request of any of the Ecovyst Companies as a director, officer, employee, fiduciary, trustee, representative, partner or agent of any other Ecovyst Entity shall be reduced by any amount Indemnitee has actually received as payment of indemnification or advancement of Expenses from such other Ecovyst Entity, except to the extent that such indemnification payments and advance payment of Expenses when taken together with any such amount actually received from other Ecovyst Entities or under director and officer insurance policies maintained by one or more Ecovyst Entities are inadequate to fully pay all costs, Expenses or other items to the full extent that Indemnitee is otherwise entitled to indemnification or other payment hereunder.

(f) Except as provided in Sections 11(c), 11(d) and 11(e) of this Agreement, the rights to indemnification and advancement of Expenses as provided by this Agreement shall not be deemed exclusive of, and shall be considered supplemental to, any other rights to which Indemnitee may at any time, whenever conferred or arising, be entitled under Applicable Law, under the Ecovyst Entities' Certificates of Incorporation or By-Laws, or under any other agreement, vote of stockholders or resolution of directors of any Ecovyst Entity, or otherwise. Indemnitee's rights under this Agreement are present contractual rights that fully vest upon Indemnitee's first service as a director or an officer of any of the Ecovyst Companies. The Parties hereby agree that Sections 11(c), 11(d) and 11(e) of this Agreement shall be deemed exclusive and shall be deemed to modify, amend and clarify any right to indemnification or advancement provided to Indemnitee under any other contract, agreement or document with any Ecovyst Entity.

(g) No amendment, alteration or repeal of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in Indemnitee's Corporate Status prior to such amendment, alteration or repeal. To the extent that a change in the General Corporation Law of the State of Delaware (or other Applicable Law), whether by statute or judicial decision, permits greater indemnification or advancement of Expenses than would be afforded currently under the Ecovyst Entities' Certificates of Incorporation or By-Laws and this Agreement, it is the intent of the parties hereto that Indemnitee enjoy by this Agreement the greater benefits so afforded by such change. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

12. Employment Rights; Successors; Third Party Beneficiaries.

(a) This Agreement shall not be deemed an employment contract between the Ecovyst Companies and Indemnitee. This Agreement shall continue in force as provided above after Indemnitee has ceased to serve as a director or an officer of the Ecovyst Companies or any other Corporate Status.

(b) This Agreement shall be binding upon each of the Ecovyst Companies and their successors and assigns and shall inure to the benefit of Indemnitee and Indemnitee's heirs, executors and administrators. If any of the Ecovyst Companies or any of their respective successors or assigns shall (i) consolidate with or merge into any other corporation or entity and shall not be the continuing or surviving corporation or entity of such consolidation or merger or (ii) transfer all or substantially all of its properties and assets to any individual, corporation or other entity, then, and in each such case, proper provisions shall be made so that the successors and assigns of the Ecovyst Companies shall assume all of the obligations set forth in this Agreement.

(c) The Designating Stockholders are express third party beneficiaries of this Agreement, are entitled to rely upon this Agreement, and may specifically enforce the Ecovyst Companies' obligations hereunder (including but not limited to the obligations specified in Section 11 of this Agreement) as though a party hereunder.

13. Severability. If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (i) the validity, legality and enforceability of the remaining provisions of this Agreement (including without limitation, each portion of any Section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; (ii) such provision or provisions shall be deemed reformed to the extent necessary to conform to Applicable Law and to give the maximum effect to the intent of the parties hereto; and (iii) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any Section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested thereby.

14. Exception to Right of Indemnification or Advancement of Expenses. Notwithstanding any other provision of this Agreement and except as provided in Section 7(a) of this Agreement or as may otherwise be agreed by any Ecovyst Company, Indemnitee shall not be entitled to indemnification or advancement of Expenses under this Agreement with respect to any Proceeding brought by Indemnitee (other than a Proceeding by Indemnitee (i) by way of defense or counterclaim or other similar portion of a Proceeding, (ii) to enforce Indemnitee's rights under this Agreement or (iii) to enforce any other rights of Indemnitee to indemnification, advancement or contribution from the Ecovyst Companies under any other contract, by-laws or charter or under statute or other law, including any rights under Section 145 of the Delaware General Corporation Law), unless the bringing of such Proceeding or making of such claim shall have been approved by the board of directors of the applicable Ecovyst Company.

15. Definitions. For purposes of this Agreement:

(a) "Applicable Law" means, as applied to each Ecovyst Company, any law applicable to such Ecovyst Company as in existence on the date hereof and as amended from time to time; provided, however, that under all circumstances Applicable Law shall be construed assuming that Indemnitee is a director or officer of the indemnifying corporation for purposes of determining the availability and scope of any indemnification right afforded to Indemnitee under this Agreement; provided, further, that as applied to each of Opco and Potters, Applicable Law shall be construed to treat Section 145 of the Delaware General Corporation Law (as in existence on the date hereof and as amended from time to time, including any successor provision thereto) as if it was applicable to each of Opco and Potters.

(b) "Board of Directors" means the board of directors of the Company.

(c) "By-laws" means, in each case, the bylaws or similar governing document of the relevant company as amended from time to time.

(d) ["CCMP Entities" means investment funds affiliated with CCMP Capital Advisors, LP, including CCMP Capital Investors III, L.P., CCMP Capital Investors III (Employee), L.P., CCMP Capital Investors III (AV-7), L.P., CCMP Capital Investors III (AV-8), L.P., CCMP Capital Investors III (AV-9), L.P., CCMP Capital Investors III (AV-10), L.P. and Quartz Co-Invest, L.P., and any related investment adviser or management company, any investment fund, managing member or general partner that is an affiliate of any of the foregoing entities (other than any Ecovyst Entity) or that is advised by the same investment adviser as any of the foregoing entities or by an affiliate of such investment adviser.]

(e) "Certificate of Incorporation" means, in each case, the certificate of incorporation, articles of incorporation or similar constituting document of the relevant company as amended from time to time.

(f) "Corporate Status" describes the status of a person by reason of such person's past, present or future service as a director, officer, employee, fiduciary, trustee, or agent of any of the Ecovyst Companies (including, without limitation, one who serves at the request of any of the Ecovyst Companies as a director, officer, employee, fiduciary, trustee or agent of any other Ecovyst Entity).

(g) "Designating Stockholder" means any of the [CCMP Entities / INEOS Entities], in each case so long as an individual designated (directly or indirectly) by the [CCMP Entities / INEOS Entities] or any of their respective affiliates serves or has served as a director and/or officer of any Ecovyst Entity.

(h) "Determination" means a determination that either (i) there is a reasonable basis for the conclusion that indemnification of Indemnitee is proper in the circumstances because Indemnitee met a/the particular standard(s) of conduct (a "Favorable Determination") or (ii) there is no reasonable basis for the conclusion that indemnification of Indemnitee is proper in the circumstances because Indemnitee met a/the particular standard(s) of conduct (an "Adverse Determination"). An Adverse Determination shall include the decision that a Determination was required in connection with indemnification and the decision as to the applicable standard of conduct.

(i) "Disinterested Director" means a director of the Company (or, if a Determination is necessary with respect to a Ecovyst Company other than the Company, a director of such Ecovyst Company) who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee and does not otherwise have an interest materially adverse to any interest of the Indemnitee.

(j) "Expenses" shall mean all direct and indirect costs, fees and expenses of any type or nature whatsoever and shall specifically include, without limitation, all reasonable attorneys' fees, retainers, court costs, transcript costs, fees and costs of experts, witness fees and costs, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, any federal, state, local or foreign taxes imposed on Indemnitee as a result of the actual or deemed receipt of any payments under this Agreement, ERISA excise taxes and penalties, and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness, in, or otherwise participating in, a Proceeding or an appeal resulting from a Proceeding, including, but not limited to, the premium for appeal bonds, attachment bonds or similar bonds and all interest, assessments and other charges paid or payable in connection with or in respect of any such Expenses, and shall also specifically include, without limitation, all reasonable attorneys' fees and all other expenses incurred by or on behalf of Indemnitee in connection with preparing and submitting any requests or statements for indemnification, advancement, contribution or any other right provided by this Agreement. Expenses, however, shall not include amounts of judgments or fines against Indemnitee.

(k) "Independent Counsel" means, at any time, any law firm, or a member of a law firm, that (a) is experienced in matters of corporation law and (b) is not, at such time, or has not been in the five years prior to such time, retained to represent: (i) any Ecovyst Entity or Indemnitee in any matter material to either such party (other than with respect to matters concerning Indemnitee under this Agreement, or of other indemnities under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Ecovyst Companies or Indemnitee in an action to determine Indemnitee's rights under this Agreement. The Ecovyst Companies agree to pay the reasonable fees and expenses of the Independent Counsel referred to above and to fully indemnify such counsel against any and all Expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto and to be jointly and severally liable therefor.

(l) "INEOS Entities" means INEOS Investments Partnership and its respective successors and affiliates (other than any Ecovyst Entity).

(m) "Ecovyst Entity" means any Ecovyst Company, any of their respective subsidiaries and any other corporation, partnership, limited liability company, joint venture, trust, employee benefit plan or other enterprise with respect to which Indemnitee serves as a director, officer, employee, partner, representative, fiduciary, trustee or agent, or in any similar capacity, at the request of any Ecovyst Company.

(n) "Proceeding" includes any actual, threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, investigation (formal or informal), inquiry, administrative hearing or any other actual, threatened, pending or completed proceeding, whether brought by or in the right of any Ecovyst Company or otherwise and whether civil, criminal, administrative or investigative in nature, in which Indemnitee was, is, may be or will be involved as a party, witness or otherwise, by reason of Indemnitee's Corporate Status or by reason of any action taken by Indemnitee or of any inaction on Indemnitee's part while acting as director, officer, employee, fiduciary, trustee or agent of any Ecovyst Entity (in each case whether or not Indemnitee is acting or serving in any such capacity or has such status at the time any liability or expense is incurred for which indemnification or advancement of Expenses can be provided under this Agreement). If Indemnitee believes in good faith that a given situation may lead to or culminate in the institution of a Proceeding, this shall be considered a Proceeding under this paragraph.

16. Construction. Whenever required by the context, as used in this Agreement the singular number shall include the plural, the plural shall include the singular, and all words herein in any gender shall be deemed to include (as appropriate) the masculine, feminine and neuter genders.

17. Reliance. The Ecovyst Companies expressly confirm and agree that they have entered into this Agreement and assumed the obligations imposed on each of them hereby in order to induce Indemnitee to serve as a director and/or an

officer of one or more of the Ecovyst Companies, and the Ecovyst Companies acknowledge that Indemnitee is relying upon this Agreement in serving as a director and/or an officer of one or more of the Ecovyst Companies.

18. Modification and Waiver. No supplement, modification or amendment of this Agreement shall be binding unless executed in a writing identified as such by all of the parties hereto. Except as otherwise expressly provided herein, the rights of a party hereunder (including the right to enforce the obligations hereunder of the other parties) may be waived only with the written consent of such party, and no waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions hereof (whether or not similar) nor shall such waiver constitute a continuing waiver.

19. Notice Mechanics. All notices, requests, demands or other communications hereunder shall be in writing and shall be deemed to have been duly given if (i) delivered by hand and receipted for by the party to whom said notice or other communication shall have been directed, or (ii) mailed by certified or registered mail with postage prepaid, on the third business day after the date on which it is so mailed:

(a) If to Indemnitee to:
[●]

(b) If to any Ecovyst Company, to:

c/o Ecovyst Inc.
300 Lindenwood Drive
Valleybrooke Corporate Center
Malvern, Pennsylvania 19355
Attn: Joseph S. Koscinski

with a copy to: Ropes & Gray LLP
Prudential Tower, 800 Boylston Street
Boston, MA 02199-3600
Attn: Craig E. Marcus

or to such other address as may have been furnished (in the manner prescribed above) as follows: (a) in the case of a change in address for notices to Indemnitee, furnished by Indemnitee to the Ecovyst Companies and (b) in the case of a change in address for notices to any Ecovyst Company, furnished by the Ecovyst Companies to Indemnitee.

20. Contribution. To the fullest extent permissible under Applicable Law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Ecovyst Companies, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for reasonably incurred Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Ecovyst Companies and Indemnitee as a result of the event(s) and/or transaction(s) giving cause to such Proceeding; and/or (ii) the relative fault of the Ecovyst Companies (and their other directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transaction(s).

21. Governing Law; Submission to Jurisdiction; Appointment of Agent for Service of Process. This Agreement and the legal relations among the parties shall, to the fullest extent permitted under Applicable Law, be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. The Ecovyst Companies and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Court of Chancery of the State of Delaware (the "Delaware Court"), and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court, and (iv) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or otherwise inconvenient forum.

22. Headings. The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

23. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement.

[Remainder of Page Intentionally Blank]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date first above written.

The Company:

ECOVYST INC
By: ___________________________________
Name:
Title:

Intermediate Holdcos:

ECOVYST HOLDINGS INC.
By: ___________________________________
Name:
Title:

ECOVYST MIDCO I INC
By: ___________________________________
Name:
Title:

Opco:

ECOVYST CATALYST TECHNOLOGIES LLC
By: ___________________________________
Name:
Title:

Eco:

ECO SERVICES OPERATIONS CORP.
By: ___________________________________
Name:
Title:

Indemnitee:

____
Name: [●]

Exhibit 31.1

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002**

I, Belgacem Chariag, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Ecovyst 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 9, 2021

/s/ BELGACEM CHARIAG
Belgacem Chariag
Chairman of the Board, President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002

I, Michael Feehan, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Ecovyst 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 9, 2021

/s/ MICHAEL FEEHAN

Michael Feehan
Vice President and Chief Financial Officer
(Principal Financial Officer)

Exhibit 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

In connection with the quarterly report of Ecovyst Inc. (the “Company”) on Form 10-Q for the quarterly period ended June 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Belgacem Chariag, Chairman of the Board, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. The Report fully complies with the requirements of Section 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 9, 2021	/s/ BELGACEM CHARIAG
	Belgacem Chariag
	Chairman of the Board, President and Chief Executive Officer
	(Principal Executive Officer)

Exhibit 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

In connection with the quarterly report of Ecovyst Inc. (the “Company”) on Form 10-Q for the quarterly period ended June 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Michael Feehan, Executive Vice President and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. The Report fully complies with the requirements of Section 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 9, 2021	/s/ MICHAEL FEEHAN
	Michael Feehan
	Vice President and Chief Financial Officer
	(Principal Financial Officer)