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

FORM 10-Q

☑ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.**
For the quarterly period ended September 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: 000-26966

ADVANCED ENERGY INDUSTRIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**84-0846841**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1595 Wynkoop Street, Suite 800, Denver, Colorado	**80202**
(Address of principal executive offices)	(Zip Code)

Registrant’s telephone number, including area code: (970) 407-6626

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.001 par value	**AEIS**	**NASDAQ Global Select Market**

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 ☑

As of November 1, 2021, there were 37,669,635 shares of the registrant’s Common Stock, par value $0.001 per share, outstanding.

ADVANCED ENERGY INDUSTRIES, INC.
FORM 10-Q
TABLE OF CONTENTS

PART I FINANCIAL INFORMATION

ITEM 1. UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS

ADVANCED ENERGY INDUSTRIES, INC.
Unaudited Consolidated Balance Sheets
(In thousands, except per share amounts)

	September 30, 2021	December 31, 2020
ASSETS		
Current assets:		
Cash and cash equivalents	$ 547,923	$ 480,368
Marketable securities	2,833	2,654
Accounts and other receivable, net	220,112	235,178
Inventories	341,500	221,346
Income taxes receivable	19,005	4,804
Other current assets	32,984	35,899
Total current assets	1,164,357	980,249
Property and equipment, net	114,801	114,731
Operating lease right-of-use assets	104,179	103,858
Deposits and other assets	19,067	19,101
Goodwill	213,625	209,983
Intangible assets, net	165,032	168,939
Deferred income tax assets	50,994	50,801
TOTAL ASSETS	$ 1,832,055	$ 1,647,662
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 190,228	$ 125,224
Income taxes payable	14,787	11,850
Accrued payroll and employee benefits	56,141	63,487
Other accrued expenses	65,189	49,565
Customer deposits and other	24,806	12,179
Current portion of long-term debt	20,000	17,500
Current portion of operating lease liabilities	16,137	16,592
Total current liabilities	387,288	296,397
Long-term debt, net	377,597	304,546
Operating lease liabilities	96,337	95,993
Pension benefits	76,876	80,447
Deferred income tax liabilities	9,606	10,088
Uncertain tax positions	12,874	12,839
Long-term deferred revenue	6,563	7,352
Other long-term liabilities	23,123	24,660
Total liabilities	990,264	832,322
Commitments and contingencies (Note 17)		
Stockholders' equity:		
Preferred stock, $0.001 par value, 1,000 shares authorized, none issued and outstanding	—	—
Common stock, $0.001 par value, 70,000 shares authorized; 37,790 and 38,293 issued and outstanding at September 30, 2021 and December 31, 2020, respectively	38	38
Additional paid-in capital	105,923	105,009
Accumulated other comprehensive loss	(9,714)	(2,605)
Retained earnings	744,873	712,297
Advanced Energy stockholders' equity	841,120	814,739
Noncontrolling interest	671	601
Total stockholders' equity	841,791	815,340
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 1,832,055	$ 1,647,662

The accompanying notes are an integral part of these unaudited consolidated financial statements.

ADVANCED ENERGY INDUSTRIES, INC.
Unaudited Consolidated Statements of Operations
(In thousands, except per share amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Sales, net	$ 346,093	$ 389,521	$ 1,059,024	$ 1,044,857
Cost of sales	226,054	235,736	666,449	648,537
Gross profit	120,039	153,785	392,575	396,320
Operating expenses:				
Research and development	40,578	36,807	120,865	107,432
Selling, general, and administrative	48,373	51,481	143,214	145,646
Amortization of intangible assets	5,607	5,049	16,504	15,064
Restructuring expense	1,272	1,494	2,521	7,940
Total operating expenses	95,830	94,831	283,104	276,082
Operating income	24,209	58,954	109,471	120,238
Other income (expense), net	495	(6,558)	(3,674)	(11,655)
Income from continuing operations, before income taxes	24,704	52,396	105,797	108,583
Provision for income taxes	3,657	6,783	10,817	15,293
Income from continuing operations	21,047	45,613	94,980	93,290
Income (loss) from discontinued operations, net of income taxes	(37)	50	171	(421)
Net income	$ 21,010	$ 45,663	$ 95,151	$ 92,869
Income from continuing operations attributable to noncontrolling interest	6	36	70	35
Net income attributable to Advanced Energy Industries, Inc.	$ 21,004	$ 45,627	$ 95,081	$ 92,834
Basic weighted-average common shares outstanding	38,183	38,325	38,296	38,322
Diluted weighted-average common shares outstanding	38,363	38,528	38,517	38,531
Earnings per share:				
Continuing operations:				
Basic earnings per share	$ 0.55	$ 1.19	$ 2.48	$ 2.43
Diluted earnings per share	$ 0.55	$ 1.18	$ 2.46	$ 2.42
Discontinued operations:				
Basic earnings (loss) per share	$ —	$ —	$ —	$ (0.01)
Diluted earnings (loss) per share	$ —	$ —	$ —	$ (0.01)
Net income:				
Basic earnings per share	$ 0.55	$ 1.19	$ 2.48	$ 2.42
Diluted earnings per share	$ 0.55	$ 1.19	$ 2.47	$ 2.41

The accompanying notes are an integral part of these unaudited consolidated financial statements.

ADVANCED ENERGY INDUSTRIES, INC.
Unaudited Consolidated Statements of Comprehensive Income
(In thousands)

	Three Months Ended September 30, 2021	Three Months Ended September 30, 2020	Nine Months Ended September 30, 2021	Nine Months Ended September 30, 2020
Net income	$ 21,010	$ 45,663	$ 95,151	$ 92,869
Other comprehensive income (loss), net of income taxes				
Foreign currency translation	(3,661)	5,267	(9,534)	4,706
Change in fair value of cash flow hedges	172	170	2,179	(2,674)
Minimum benefit retirement liability	313	(116)	246	38
Comprehensive income	$ 17,834	$ 50,984	$ 88,042	$ 94,939
Comprehensive income attributable to noncontrolling interest	6	36	70	35
Comprehensive income attributable to Advanced Energy Industries, Inc.	$ 17,828	$ 50,948	$ 87,972	$ 94,904

The accompanying notes are an integral part of these unaudited consolidated financial statements.

ADVANCED ENERGY INDUSTRIES, INC.
Unaudited Consolidated Statements of Stockholders' Equity
(In thousands)

	Advanced Energy Industries, Inc. Stockholders' Equity						
	Common Stock						
	Shares	Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income	Retained Earnings	Non-controlling Interest	Total Stockholders' Equity
Balances, December 31, 2019	38,358	$ 38	$ 104,849	$ (5,897)	$ 577,724	$ 546	$ 677,260
Adoption of new accounting standards	—	—	—	—	(102)	—	(102)
Stock issued from equity plans	64	—	(2,171)	—	—	—	(2,171)
Stock-based compensation	—	—	3,048	—	—	—	3,048
Stock buyback	(170)	—	(7,248)	—	—	—	(7,248)
Other comprehensive income (loss)	—	—	—	(2,907)	—	—	(2,907)
Net income	—	—	—	—	18,063	15	18,078
Balances, March 31, 2020	38,252	$ 38	$ 98,478	$ (8,804)	$ 595,685	$ 561	$ 685,958
Stock issued from equity plans	73	—	779	—	—	—	779
Stock-based compensation	—	—	2,837	—	—	—	2,837
Other comprehensive income (loss)	—	—	—	(344)	—	—	(344)
Net income	—	—	—	—	29,144	(16)	29,128
Balances, June 30, 2020	38,325	$ 38	$ 102,094	$ (9,148)	$ 624,829	$ 545	$ 718,358
Stock issued from equity plans	20	—	(59)	—	—	—	(59)
Stock-based compensation	—	—	3,781	—	—	—	3,781
Stock buyback	(73)	—	(4,331)	—	—	—	(4,331)
Other comprehensive income (loss)	—	—	—	5,321	—	—	5,321
Net income	—	—	—	—	45,627	36	45,663
Balances, September 30, 2020	38,272	$ 38	$ 101,485	$ (3,827)	$ 670,456	$ 581	$ 768,733
Balances, December 31, 2020	38,293	$ 38	$ 105,009	$ (2,605)	$ 712,297	$ 601	$ 815,340
Stock issued from equity plans	93	—	(4,645)	—	—	—	(4,645)
Stock-based compensation	—	—	5,701	—	—	—	5,701
Dividend payments	—	—	—	—	(3,854)	—	(3,854)
Other comprehensive income (loss)	—	—	—	(4,968)	—	—	(4,968)
Net income	—	—	—	—	38,668	33	38,701
Balances, March 31, 2021	38,386	$ 38	$ 106,065	$ (7,573)	$ 747,111	$ 634	$ 846,275
Stock issued from equity plans	67	—	956	—	—	—	956
Stock-based compensation	—	—	3,277	—	—	—	3,277
Stock buyback	(72)	—	(6,503)	—	—	—	(6,503)
Dividend payments	—	—	—	—	(3,874)	—	(3,874)
Other comprehensive income (loss)	—	—	—	1,035	—	—	1,035
Net income	—	—	—	—	35,409	31	35,440
Balances, June 30, 2021	38,381	$ 38	$ 103,795	$ (6,538)	$ 778,646	$ 665	$ 876,606
Stock issued from equity plans	14	—	223	—	—	—	223
Stock-based compensation	—	—	3,540	—	—	—	3,540
Stock buyback	(605)	—	(1,635)	—	(50,920)	—	(52,555)
Dividend payments	—	—	—	—	(3,857)	—	(3,857)
Other comprehensive income (loss)	—	—	—	(3,176)	—	—	(3,176)
Net income	—	—	—	—	21,004	6	21,010
Balances, September 30, 2021	37,790	$ 38	$ 105,923	$ (9,714)	$ 744,873	$ 671	$ 841,791

The accompanying notes are an integral part of these unaudited consolidated financial statements.

ADVANCED ENERGY INDUSTRIES, INC.
Unaudited Consolidated Statements of Cash Flows
(In thousands)

	Nine Months Ended September 30, 2021	Nine Months Ended September 30, 2020
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income	$ 95,151	$ 92,869
Income (loss) from discontinued operations, net of income taxes	171	(421)
Income from continuing operations, net of income taxes	94,980	93,290
Adjustments to reconcile net income to net cash from operating activities:		
Depreciation and amortization	39,225	35,433
Stock-based compensation expense	12,819	9,666
Provision for deferred income taxes	(1,404)	(7,849)
(Gain) loss from discount on notes receivable	(638)	721
Loss on disposal of assets	923	678
Changes in operating assets and liabilities, net of assets acquired:		
Accounts and other receivable, net	14,957	8,670
Inventories	(118,562)	(26,983)
Other assets	1,958	5,039
Accounts payable	63,404	(12,971)
Other liabilities and accrued expenses	8,963	30,964
Income taxes	(10,215)	(1,626)
Net cash from operating activities from continuing operations	106,410	135,032
Net cash from operating activities from discontinued operations	(523)	(659)
Net cash from operating activities	105,887	134,373
CASH FLOWS FROM INVESTING ACTIVITIES:		
Net proceeds from sale of marketable securities	—	3
Receipt (issuance) of notes receivable	802	(1,000)
Proceeds from sale of assets	1,537	103
Purchases of property and equipment	(22,721)	(25,232)
Acquisitions, net of cash acquired	(18,739)	(1,127)
Net cash from investing activities from continuing operations	(39,121)	(27,253)
Net cash from investing activities from discontinued operations	—	—
Net cash from investing activities	(39,121)	(27,253)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from long-term borrowings	85,000	—
Payment of debt-issuance costs	(1,350)	—
Payments on long-term borrowings	(8,750)	(13,125)
Dividend payments	(11,585)	—
Purchase and retirement of common stock	(56,625)	(11,579)
Net payments related to stock-based awards	(3,136)	(1,451)
Net cash from financing activities from continuing operations	3,554	(26,155)
Net cash from financing activities from discontinued operations	—	—
Net cash from financing activities	3,554	(26,155)
EFFECT OF CURRENCY TRANSLATION ON CASH	(2,765)	1,571
NET CHANGE IN CASH AND CASH EQUIVALENTS	67,555	82,536
CASH AND CASH EQUIVALENTS, beginning of period	480,368	346,441
CASH AND CASH EQUIVALENTS, end of period	547,923	428,977
Less cash and cash equivalents from discontinued operations	—	—
CASH AND CASH EQUIVALENTS FROM CONTINUING OPERATIONS, end of period	$ 547,923	$ 428,977
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:		
Cash paid for interest	$ 2,896	$ 4,261
Cash paid for income taxes	$ 25,271	$ 16,079
Cash received for refunds of income taxes	$ 3,116	$ 821

The accompanying notes are an integral part of these unaudited consolidated financial statements.

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS
(In thousands, except per share data)

NOTE 1. DESCRIPTION OF BUSINESS AND BASIS OF PRESENTATION

Advanced Energy Industries, Inc., a Delaware corporation, and its wholly-owned subsidiaries ("we," "us," "our," "Advanced Energy," or the "Company") design, manufacture, sell, and support precision power products that transform, refine, and modify the raw electrical power from the utility and convert it into various types of highly-controllable usable power that is predictable, repeatable, and customizable. Our power solutions enable innovation in complex semiconductor and thin film plasma processes such as dry etch, strip, chemical and physical deposition, high and low voltage applications such as process control, analytical instrumentation, medical equipment, and in temperature-critical thermal applications such as material and chemical processing.

We also supply related instrumentation products for advanced temperature measurement and control, electrostatic instrumentation products for test and measurement applications, and gas sensing and monitoring solutions for several industrial markets. Our network of service support centers facilitates local repair and field service in key regions, provides upgrades and refurbishment services, and sells used equipment to businesses that use our products.

In September 2019, we acquired the Artesyn Embedded Power business ("Artesyn"), which added new power products and technologies used in networking and computing, data center, including hyperscale, and industrial and medical applications. As of December 31, 2015, we discontinued our engineering, production, and sales of our inverter product line. As such, all inverter product revenues, costs, assets, and liabilities are reported in Discontinued Operations for all periods presented herein, and we currently report as a single unit. Ongoing inverter repair and service operations are reported as part of our continuing operations.

In the opinion of management, the accompanying unaudited consolidated financial statements contain all adjustments, consisting of normal, recurring adjustments, necessary to present fairly the financial position of the Company as of September 30, 2021, and the results of our operations and cash flows for the three and nine months ended September 30, 2021 and 2020.

The unaudited consolidated financial statements included herein have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"). Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") have been omitted pursuant to such rules and regulations. These unaudited consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto contained in our Annual Report on Form 10-K for the year ended December 31, 2020 and other financial information filed with the SEC.

Use of Estimates in the Preparation of the Consolidated Financial Statements

The preparation of our consolidated financial statements in conformity with U.S. GAAP requires us to make estimates, assumptions, and judgments that affect the reported amounts of assets and liabilities, the disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. The significant estimates, assumptions, and judgments include, but are not limited to:

- allowances for expected credit loss;
- excess and obsolete inventory;
- warranty reserves;
- pension obligations;
- right-of-use assets and related operating lease liabilities;
- acquisitions and asset valuations;
- asset lives;
- depreciation and amortization;
- recoverability of assets and potential impairment;
- deferred revenue;
- stock options, performance-based stock, and restricted stock grants; and
- taxes and other provisions.

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

We believe our significant estimates, assumptions, and judgments are reasonable based on the information available at the time they are made. Actual results may differ from these estimates, making it possible that a change in these estimates could occur in the near term.

Critical Accounting Policies

Our accounting policies are described in Note 1 to our audited consolidated financial statements in our Annual Report on Form 10-K for the year ended December 31, 2020.

New Accounting Standards

From time to time, the Financial Accounting Standards Board ("FASB") or other standards setting bodies issue new accounting pronouncements. Updates to the FASB Accounting Standards Codification ("ASC") are communicated through issuance of an Accounting Standards Update ("ASU"). Unless otherwise discussed, we believe that the impact of recently issued guidance, whether adopted or to be adopted in the future, will not have a material impact on the consolidated financial statements upon adoption.

New Accounting Standards Adopted

In August 2018, the FASB issued ASU 2018-14, "Compensation—Retirement Benefits—Defined Benefit Plans—General (Subtopic 715-20)" ("ASU 2018-14"). ASU 2018-14 eliminates requirements for certain disclosures and requires additional disclosures under defined benefit pension plans and other post-retirement plans. ASU 2018-14 was effective for us on January 1, 2021. The impact of adoption was not material to our consolidated financial statements.

New Accounting Standards Issued But Not Yet Adopted

In March 2020, the FASB issued ASU 2020-04, *"Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting"* ("ASU 2020-04"). In January 2021, the FASB issued ASU 2021-01, *"Reference Rate Reform (Topic 848): Scope"* ("ASU 2021-01"). This collective guidance provides optional expedients and exceptions for applying GAAP to contract modifications and hedging relationships, subject to meeting certain criteria, that reference LIBOR or another reference rate that is expected to be discontinued. ASU 2020-04 and ASU 2021-01 will be in effect through December 31, 2022. We are currently assessing the potential impact of ASU 2020-04 and ASU 2021-01 on our consolidated financial statements.

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

NOTE 2. ACQUISITIONS

Intangible Assets Acquired

In January 2021, we acquired certain intangible assets related to the manufacturing of fiber optic sensing equipment for $3.6 million in cash and an additional $2.9 million expected to be paid within one year of the closing date. These intangible assets have an estimated useful life of five years. See *Note 12. Intangible Assets* for additional details.

TEGAM, Inc.

On June 1, 2021, we acquired 100% of the issued and outstanding shares of capital stock of TEGAM, Inc., which is based in Geneva, Ohio. This acquisition added metrology and calibration instrumentation to Advanced Energy's radio frequency ("RF") process power solutions in our semiconductor and advanced industrial markets.

The components of the fair value of the total consideration transferred were as follows:

Cash paid for acquisition	$	15,552
Holdback		2,100
Total fair value of consideration transferred		17,652
Less cash acquired		(472)
Total purchase price	$	17,180

We are still evaluating the fair value for the assets acquired and liabilities assumed. Accordingly, the purchase price allocation presented below is preliminary.

		Preliminary Fair Value
Current assets and liabilities, net	$	3,870
Property and equipment		734
Operating lease right-of-use assets		425
Intangible assets		6,900
Goodwill		5,670
Other non-current assets		31
Total assets acquired		17,630
Other non-current liabilities		25
Operating lease liability		425
Total liabilities assumed		450
Total fair value of net assets acquired	$	17,180

(In thousands, except per share data)

Versatile Power, Inc.

On December 31, 2020, we acquired 100% of the issued and outstanding shares of capital stock of Versatile Power, Inc., which is based in Campbell, California. This acquisition added RF and programmable power supplies for medical and industrial applications to our product portfolio and further expands our presence in the medical market by adding proven technologies, deep customer relationships, expertise in medical design, and a medical-certified manufacturing center.

The components of the fair value of the total consideration transferred were as follows:

Cash paid for acquisition	$ 4,654
Holdback	950
Contingent consideration	1,500
Total fair value of consideration transferred	7,104
Less cash acquired	(245)
Total purchase price	$ 6,859

We are still evaluating the fair value for the assets acquired and liabilities assumed. Accordingly, the purchase price allocation presented below is preliminary.

	Preliminary Fair Value
Current assets and liabilities, net	$ 1,013
Property and equipment	35
Operating lease right-of-use assets	463
Intangible assets	4,000
Goodwill	1,831
Total assets acquired	7,342
Other non-current liabilities	20
Operating lease liability	463
Total liabilities assumed	483
Total fair value of net assets acquired	$ 6,859

NOTE 3. REVENUE

Revenue Recognition

We recognize revenue when we have satisfied our performance obligations which typically occurs when control of the products or services has been transferred to our customers. The transaction price is based upon the standalone selling price. In most transactions, we have no obligations to our customers after the date products are shipped, other than pursuant to warranty obligations. Shipping and handling fees billed to customers, if any, are recognized as revenue. The related shipping and handling costs are recognized in cost of sales. Support services include warranty and non-warranty repair services, upgrades, and refurbishments on the products we sell. Repairs that are covered under our standard warranty do not generate revenue.

Nature of goods and services

Products

Advanced Energy provides highly engineered, mission-critical, precision power conversion, measurement, and control solutions to our global customers. We design, manufacture, sell and support precision power products that transform electrical power into various usable forms. Our power conversion products refine, modify, and control the raw electrical power from a utility and convert it into power that is predictable, repeatable, and customizable. Our products enable thin film manufacturing processes such as plasma enhanced chemical and physical deposition and etch for various semiconductor and industrial products, industrial thermal applications for material and chemical processes, and specialty power for critical industrial technology applications. We also supply thermal instrumentation products for advanced temperature measurement and control in these markets. As a result of the Artesyn acquisition, we now sell precision power conversion products into the Telecom and Networking, Data Center Computing (including hyperscale), and Industrial and Medical markets.

Our products are designed to enable new process technologies, improve productivity, and lower the cost of ownership for our customers. We also provide repair and maintenance services for all our products. We principally serve original equipment manufacturers ("OEM") and end customers in the semiconductor, flat panel display, high voltage, solar panel, Telecom and Networking, Data Center Computing, Industrial and Medical markets. Our advanced power products are used in diverse markets, applications, and processes including the manufacture of capital equipment for semiconductor device manufacturing, thin film applications for thin film renewables and architectural glass, and for other thin film applications including flat panel displays, and industrial coatings. Our embedded power products are used in a wide range of applications, such as 5G, data center (including hyperscale) and other industrial and medical applications.

Services

Our services group offers warranty and after-market repair services in the regions in which we operate, providing us with preventive maintenance opportunities. Our customers continue to pursue low cost of ownership of their capital equipment and are increasingly sensitive to the costs of system downtime. They expect that suppliers offer comprehensive local repair service and customer support. To meet these market requirements, we maintain a worldwide support organization in the United States ("U.S."), the People’s Republic of China ("PRC"), Japan, Korea, Taiwan, Germany, Ireland, Singapore, Israel, and Great Britain. Support services include warranty and non-warranty repair services, upgrades, and refurbishments on the products we sell.

As part of our ongoing service business, we satisfy our service obligations under preventative maintenance contracts and extended warranties which had previously been offered on our discontinued inverter products. Any up-front fees received for extended warranties or maintenance plans are deferred. Revenue under these arrangements is recognized ratably over the underlying terms as we do not have historical information which would allow us to project the estimated service usage pattern at this time.

The following table summarizes deferred revenue, which relates to extended warranties and service contracts. We expect to recognize this revenue ratably through the year 2031.

	September 30, 2021	December 31, 2020
Deferred revenue	$ 7,908	$ 8,671

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

Disaggregation of Revenue

The following tables present additional information regarding our revenue:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Semiconductor Equipment	$ 173,441	$ 167,058	$ 530,828	$ 446,107
Industrial and Medical	80,800	87,013	242,412	219,877
Data Center Computing	62,231	87,741	190,843	257,240
Telecom and Networking	29,621	47,709	94,941	121,633
Total	$ 346,093	$ 389,521	$ 1,059,024	$ 1,044,857

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Product	$ 312,389	$ 358,257	$ 956,790	$ 959,388
Services	33,704	31,264	102,234	85,469
Total	$ 346,093	$ 389,521	$ 1,059,024	$ 1,044,857

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
United States	$ 139,089	$ 152,503	$ 410,212	$ 389,007
North America (excluding U.S.)	24,708	38,126	77,067	115,712
Asia	135,838	180,660	434,232	462,388
Europe	44,838	17,886	129,751	76,070
Other	1,620	346	7,762	1,680
Total	$ 346,093	$ 389,521	$ 1,059,024	$ 1,044,857

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Product and service revenue recognized at point in time	$ 345,548	$ 389,306	$ 1,058,012	$ 1,044,255
Extended warranty and service contracts recognized over time	545	215	1,012	602
Total	$ 346,093	$ 389,521	$ 1,059,024	$ 1,044,857

NOTE 4. INCOME TAXES

The following table summarizes tax expense and the effective tax rate for our income from continuing operations:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Income from continuing operations, before income taxes	$ 24,704	$ 52,396	$ 105,797	$ 108,583
Provision for income taxes	$ 3,657	$ 6,783	$ 10,817	$ 15,293
Effective tax rate	14.8 %	12.9 %	10.2 %	14.1 %

The Company’s effective tax rates differ from the U.S. federal statutory rate of 21% for the three and nine months ended September 30, 2021 and 2020, respectively, primarily due to the benefit of earnings in foreign jurisdictions which are subject to lower tax rates, partially offset by net U.S. tax on foreign operations and withholding taxes. The effective tax rate for the first nine months of 2021 was lower than the same period in 2020 primarily due to the mix of discrete events between the two periods.

NOTE 5. EARNINGS PER SHARE

Basic earnings per share ("EPS") is computed by dividing income available to common stockholders by the weighted-average number of common shares outstanding during the period. The computation of our diluted EPS is similar to the computation of our basic EPS except that the denominator is increased to include the number of additional common shares that would have been outstanding (using the if-converted and treasury stock methods), if our outstanding stock options and restricted stock units had been converted to common shares, and if such assumed conversion is dilutive.

The following is a reconciliation of the weighted-average shares outstanding used in the calculation of basic and diluted earnings per share:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Income from continuing operations	$ 21,047	$ 45,613	$ 94,980	$ 93,290
Income from continuing operations attributable to noncontrolling interest	6	36	70	35
Income from continuing operations attributable to Advanced Energy Industries, Inc.	$ 21,041	$ 45,577	$ 94,910	$ 93,255
Basic weighted-average common shares outstanding	38,183	38,325	38,296	38,322
Assumed exercise of dilutive stock options and restricted stock units	180	203	221	209
Diluted weighted-average common shares outstanding	38,363	38,528	38,517	38,531
Continuing operations:				
Basic earnings per share	$ 0.55	$ 1.19	$ 2.48	$ 2.43
Diluted earnings per share	$ 0.55	$ 1.18	$ 2.46	$ 2.42

The following stock awards were excluded in the computation of diluted earnings per share because they were anti-dilutive:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Restricted stock units	82	—	2	—

Share Repurchase

To execute the repurchase of shares of our common stock, the Company periodically enters into stock repurchase agreements. The following table summarizes these repurchases:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(in thousands, except per share amounts)	2021	2020	2021	2020
Amount paid and accrued to repurchase shares	$ 52,555	$ 4,331	$ 59,058	$ 11,579
Number of shares repurchased	605	73	677	243
Average repurchase price per share	$ 86.93	$ 59.70	$ 87.30	$ 47.70
Remaining authorized by Board of Directors for future repurchases as of period end	$ 147,444	$ 38,420	$ 147,444	$ 38,420

(In thousands, except per share data)

There were no shares repurchased from related parties. Repurchased shares were retired and assumed the status of authorized and unissued shares.

On July 29, 2021, the Board of Directors approved an increase to the share repurchase program, which authorized the Company to repurchase up to $200 million in shares of our common stock with no time limitation. During the quarter, we repurchased 0.605 million shares of our common stock for $52.6 million. Subsequent to September 30, 2021 and before the filing date of this Quarterly Report on Form 10-Q, we repurchased 0.121 million shares of our common stock for $10.4 million.

NOTE 6. FAIR VALUE MEASUREMENTS

The following tables present information about the Company's assets and liabilities measured at fair value on a recurring basis.

		September 30, 2021			
Description	Balance Sheet Classification	Level 1	Level 2	Level 3	Total Fair Value
Assets:					
Certificates of deposit	Marketable securities	$ —	$ 2,833	$ —	$ 2,833
Foreign currency forward contracts	Other current assets	—	38	—	38
Interest rate swaps	Deposits and other assets	—	52	—	52
Total assets measured at fair value on a recurring basis		$ —	$ 2,923	$ —	$ 2,923
Liabilities:					
Contingent consideration	Other current liabilities	$ —	$ —	$ 2,169	$ 2,169
Contingent consideration	Other long-term liabilities	—	—	3,052	3,052
Total liabilities measured at fair value on a recurring basis		$ —	$ —	$ 5,221	$ 5,221

		December 31, 2020			
Description	Balance Sheet Classification	Level 1	Level 2	Level 3	Total Fair Value
Assets:					
Certificates of deposit	Marketable securities	$ —	$ 2,654	$ —	$ 2,654
Total assets measured at fair value on a recurring basis		$ —	$ 2,654	$ —	$ 2,654
Liabilities:					
Contingent consideration	Other current liabilities	$ —	$ —	$ 2,009	$ 2,009
Contingent consideration	Other long-term liabilities	—	—	2,940	2,940
Interest rate swaps	Other long-term liabilities	—	2,811	—	2,811
Total liabilities measured at fair value on a recurring basis		$ —	$ 2,811	$ 4,949	$ 7,760

(In thousands, except per share data)

The fair value of foreign currency forward contracts is based on the movement in the forward rates of foreign currency cash flows in which the hedging instrument is denominated. We determine the fair value of interest rate swaps by estimating the net present value of the expected cash flows based on market rates and associated yield curves, adjusted for non-performance credit risk, as applicable. See *Note 7. Derivative Financial Instruments* for additional information. The fair value of contingent consideration is determined by estimating the net present value of the expected cash flows based on the probability of expected payment. For all periods presented, there were no transfers into or out of Level 3.

NOTE 7. DERIVATIVE FINANCIAL INSTRUMENTS

We are impacted by changes in foreign currency exchange rates. We may manage these risks through the use of derivative financial instruments, primarily forward contracts with banks. These forward contracts manage the exchange rate risk associated with assets and liabilities denominated in nonfunctional currencies. These derivative instruments are typically executed for one-month periods and not designated as hedges; however, they do economically offset the fluctuations of our assets and liabilities due to foreign exchange rate changes.

The following table summarizes the notional amount of outstanding foreign currency forward contracts:

	September 30, 2021	December 31, 2020
Foreign currency forward contracts	$ 45,550	$ —

Gains and losses related to foreign currency exchange contracts were offset by corresponding gains and losses on the revaluation of the underlying assets and liabilities. Both are included as a component of other income (expense), net in our Unaudited Consolidated Statements of Operations.

In April 2020, the Company executed interest rate swap contracts with independent financial institutions to partially reduce the variability of cash flows in LIBOR indexed debt interest payments on our Term Loan Facility (under the Company's existing Credit Agreement dated September 10, 2019). These transactions are accounted for as cash flow hedging instruments.

The interest rate swap contracts fixed a portion of the outstanding principal balance on our term loan to a total interest rate of 1.271%. This is comprised of 0.521% average fixed rate per annum in exchange for a variable interest rate based on one-month USD-LIBOR-BBA plus the credit spread in the Company's existing Credit Agreement, which is 75 basis points at current leverage ratios.

The following table summarizes the notional amount of qualified hedging instruments:

	September 30, 2021	December 31, 2020
Interest rate swap contracts	$ 260,094	$ 273,219

The following table summarizes the balances recorded in Accumulated other comprehensive loss on the Unaudited Consolidated Balance Sheets for qualifying hedges.

	September 30, 2021	December 31, 2020
Interest rate swap contracts	$ (40)	$ 2,139

See *Note 6. Fair Value Measurements* for information regarding fair value of derivative instruments.

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

As a result of the use of derivative financial instruments, the Company is exposed to the risk that counterparties to derivative contracts may fail to meet their contractual obligations. The Company manages counterparty credit risk in derivative contracts by reviewing counterparty creditworthiness on a regular basis and limiting exposure to any single counterparty.

NOTE 8. ACCOUNTS AND OTHER RECEIVABLE, NET

Accounts and other receivable are recorded at net realizable value. Components of accounts and other receivable, net of reserves, were as follows:

	September 30, 2021	December 31, 2020
Amounts billed, net	$ 192,147	$ 213,560
Unbilled receivables	27,965	21,618
Total receivables, net	$ 220,112	$ 235,178

Amounts billed, net consist of amounts that have been invoiced to our customers in accordance with terms and conditions and are shown net of an allowance for credit losses. These receivables are all short-term in nature and do not include any financing components.

Unbilled receivables consist of amounts where we have satisfied our contractual obligations related to inventory stocking contracts with customers. Such amounts typically become billable to the customer upon their consumption of the inventory managed under the stocking contracts. We anticipate that substantially all unbilled receivables will be invoiced and collected over the next twelve months. These contracts do not include any financing components.

The following table summarizes the changes in expected credit losses:

	Nine Months Ended September 30, 2021
Balance at beginning of period	$ 7,602
Additions	-
Deductions - write-offs, net of recoveries	(677)
Foreign currency translation	(22)
Other	(1,248)
Balance at end of period	$ 5,655

NOTE 9. INVENTORIES

Our inventories are valued at the lower of cost or net realizable value and computed on a first-in, first-out ("FIFO") basis. Components of inventories were as follows:

	September 30, 2021	December 31, 2020
Parts and raw materials	$ 258,281	$ 141,337
Work in process	21,569	13,702
Finished goods	61,650	66,307
Total	$ 341,500	$ 221,346

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

NOTE 10. PROPERTY AND EQUIPMENT, NET

Property and equipment, net is comprised of the following:

	September 30, 2021	December 31, 2020
Buildings and land	$ 1,631	$ 1,776
Machinery and equipment	126,896	115,404
Computer and communication equipment	27,589	26,623
Furniture and fixtures	5,055	4,352
Vehicles	261	262
Leasehold improvements	46,345	42,984
Construction in process	5,017	3,693
	212,794	195,094
Less: Accumulated depreciation	(97,993)	(80,363)
Property and equipment, net	$ 114,801	$ 114,731

The following table summarizes depreciation expense. All depreciation expense is recorded in income from continuing operations:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Depreciation expense	$ 7,874	$ 7,188	$ 22,721	$ 20,369

NOTE 11. GOODWILL

The following table summarizes the changes in goodwill:

	Nine Months Ended September 30, 2021
Balance at beginning of period	$ 209,983
Measurement period adjustments to purchase price allocation	82
Additions from acquisition	5,670
Foreign currency translation	(2,110)
Balance at end of period	$ 213,625

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

NOTE 12. INTANGIBLE ASSETS

Intangible assets consisted of the following:

	September 30, 2021		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Technology	$ 91,605	$ (33,055)	$ 58,550
Customer relationships	118,733	(32,182)	86,551
Trademarks and other	27,249	(7,318)	19,931
Total	$ 237,587	$ (72,555)	$ 165,032

	December 31, 2020		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Technology	$ 85,075	$ (24,999)	$ 60,076
Customer relationships	114,171	(26,880)	87,291
Trademarks and other	27,021	(5,449)	21,572
Total	$ 226,267	$ (57,328)	$ 168,939

Amortization expense related to intangible assets is as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Amortization expense	$ 5,607	$ 5,049	$ 16,504	$ 15,064

Estimated amortization expense related to intangibles is as follows:

Year Ending December 31,	
2021 (remaining)	$ 5,541
2022	22,043
2023	22,024
2024	19,153
2025	14,665
Thereafter	81,606
Total	$ 165,032

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

NOTE 13. RESTRUCTURING COSTS

During 2018, we committed to a restructuring plan to optimize our manufacturing footprint and to improve our operating efficiencies and synergies related to our recent acquisitions. For the periods presented, we incurred severance costs primarily related to the transition and exit of our facility in Shenzhen, PRC and actions associated with synergies related to the Artesyn acquisition. The table below summarizes the restructuring charges:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Severance and related charges	$ 676	$ 202	$ 1,270	$ 5,207
Facility relocation and closure charges	596	1,292	1,251	2,733
Total restructuring charges	$ 1,272	$ 1,494	$ 2,521	$ 7,940

	Cumulative Cost Through September 30, 2021
Severance and related charges	$ 18,183
Facility relocation and closure charges	6,781
Total restructuring charges	$ 24,964

Our restructuring liabilities are included in other accrued expenses in our Unaudited Consolidated Balance Sheets and related primarily to severance and related charges. Changes in restructuring liabilities were as follows:

	Nine Months Ended September 30, 2021
Balance at beginning of period	$ 10,641
Costs incurred and charged to expense	2,521
Costs paid or otherwise settled	(3,463)
Effects of changes in exchange rate	—
Balance at end of period	$ 9,699

NOTE 14. WARRANTIES

Provisions of our sales agreements include customary product warranties, generally ranging from 12 months to 24 months after shipment. The estimated cost of our warranty obligation is recorded when revenue is recognized and is based upon our historical experience by product and configuration.

Our estimated warranty obligation is included in other accrued expenses in our Unaudited Consolidated Balance Sheets. Changes in our product warranty obligation were as follows:

	Nine Months Ended September 30, 2021
Balance at beginning of period	$ 4,780
Increases to accruals	2,290
Warranty expenditures	(3,404)
Effect of changes in exchange rates	(4)
Balance at end of period	$ 3,662

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

NOTE 15. LEASES

The Company leases manufacturing and office space under non-cancelable operating leases. Some of these leases contain provisions for landlord funded leasehold improvements which are recorded as a reduction to right-of-use ("ROU") assets and the related operating lease liabilities. For leases containing an option to renew, we regularly evaluate the renewal options and when they are reasonably certain of exercise, we include the renewal period in our lease terms, along with the ROU assets and operating lease liabilities. In many cases, we have lease terms that are less than one year and therefore, we have elected the practical expedient to exclude these short-term leases from our ROU assets and operating lease liabilities. New leases are negotiated and executed to meet business objectives on an on-going basis.

Our leases do not provide an implicit rate. Accordingly, we use our incremental borrowing rate based on the information available at the lease commencement date in determining the present value of the lease payments. We have a centrally managed treasury function; therefore, we apply a portfolio approach for determining the incremental borrowing rate applicable to the lease term.

Components of operating lease cost were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Operating lease cost	$ 5,735	$ 4,806	$ 17,708	$ 14,500
Short-term and variable lease cost	578	1,504	1,704	4,151
Total operating lease cost	$ 6,313	$ 6,310	$ 19,412	$ 18,651

Maturities of our operating lease liabilities are as follows:

Year Ending December 31,	
2021 (remaining)	$ 5,507
2022	20,004
2023	16,685
2024	14,295
2025	12,027
Thereafter	75,473
Total lease payments	143,991
Less: Interest	(31,517)
Present value of lease liabilities	$ 112,474

In addition, we have lease agreements that commence in the future between 2021 and 2023 with total payments of $3.9 million through 2028.

Other information related to leases, including supplemental cash flow information, consists of:

	September 30, 2021	December 31, 2020
Weighted average remaining lease term (in years)	9.91	10.65
Weighted average discount rate	4.51 %	4.63 %

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Cash paid for operating leases	$ 6,058	$ 5,934	$ 18,037	$ 17,336
Right-of-use assets obtained in exchange for operating lease liabilities	$ 7,169	$ 9,586	$ 14,402	$ 34,064

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

NOTE 16. STOCK-BASED COMPENSATION

On May 4, 2017, the stockholders approved the Company's 2017 Omnibus Incentive Plan ("the 2017 Plan"), and all shares that were then available for issuance under the 2008 Omnibus Incentive Plan are now available for issuance under the 2017 Plan. The 2017 Plan and 2008 Plan provide for the grant of stock options, stock appreciation rights, restricted stock, stock units (including deferred stock units), unrestricted stock, and dividend equivalent rights. Any of the awards issued may be issued as performance-based awards to align stock compensation awards to the attainment of annual or long-term performance goals. As of September 30, 2021, there were 1.9 million shares available for grant under the 2017 Plan.

Restricted stock units ("RSU's") are generally granted with a grant date fair value equal to the market price of our stock on the date of grant and with generally a three or four-year vesting schedule or performance-based vesting as determined at the time of grant.

Stock option awards are generally granted with an exercise price equal to the market price of our stock on the date of grant and with either a three or four-year vesting schedule or performance-based vesting as determined at the time of grant. Stock option awards generally have a term of 10 years.

We recognize stock-based compensation expense based on the fair value of the awards issued and the functional area of the employee receiving the award. Stock-based compensation was as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Stock-based compensation expense	$ 3,674	$ 3,781	$ 12,819	$ 9,666

Changes in our RSUs were as follows:

	Nine Months Ended September 30, 2021	
	Number of RSUs	Weighted-Average Grant Date Fair Value
RSUs outstanding at beginning of period	608	$ 58.15
RSUs granted	388	$ 95.96
RSUs vested	(177)	$ 62.73
RSUs forfeited	(182)	$ 68.49
RSUs outstanding at end of period	637	$ 76.97

Changes in our stock options were as follows:

	Nine Months Ended September 30, 2021	
	Number of Options	Weighted-Average Exercise Price per Share
Options outstanding at beginning of period	147	$ 23.63
Options exercised	(35)	$ 21.10
Options expired	—	$ —
Options outstanding at end of period	112	$ 24.41

(In thousands, except per share data)

NOTE 17. COMMITMENTS AND CONTINGENCIES

We are involved in disputes and legal actions arising in the normal course of our business. While we currently believe that the amount of any ultimate loss would not be material to our financial position, the outcome of these actions is inherently difficult to predict. In the event of an adverse outcome, the ultimate loss could have a material adverse effect on our financial position or reported results of operations. An unfavorable decision in patent litigation also could require material changes in production processes and products or result in our inability to ship products or components found to have violated third-party patent rights. We accrue loss contingencies in connection with our commitments and contingencies, including litigation, when it is probable that a loss has occurred, and the amount of the loss can be reasonably estimated. The Company is not currently party to any legal action that the Company believes would reasonably have a material adverse impact on its business, financial condition, results of operations or cash flows.

NOTE 18. SIGNIFICANT CUSTOMER INFORMATION

The following table summarizes sales, and percentages of sales, by customers that individually accounted for 10% or more of our sales:

	Three Months Ended September 30,			
	2021		2020	
Applied Materials, Inc.	$ 77,136	22.3 %	$ 65,740	16.9 %
Lam Research	$ 39,149	11.3 %	40,798	10.5 %

	Nine Months Ended September 30,			
	2021		2020	
Applied Materials, Inc.	$ 218,757	20.7 %	$ 181,129	17.3 %
Lam Research	$ 109,734	10.4 %	*	* %

The following table summarizes the accounts receivable balances and percentages of the total accounts receivable for customers that individually accounted for 10% or more of accounts receivable:

	September 30, 2021		December 31, 2020	
Applied Materials, Inc.	$ 41,159	18.7 %	$ 33,402	14.2 %
Nidec Motor Corporation	*	* %	$ 24,344	10.4 %

* Customer's balance was less than 10% of total.

Our sales to Applied Materials, Inc. and Lam Research include precision power products used in semiconductor processing and solar and flat panel display. Our sales to Nidec Motor Corporation are primarily embedded power products used in industrial motor drives. No other customer accounted for 10% or more of our sales or accounts receivable balances during these periods.

(In thousands, except per share data)

NOTE 19. CREDIT FACILITY

In September 2019, in connection with the Artesyn Acquisition Agreement, we entered into a credit agreement ("Credit Agreement") that provided aggregate financing of $500.0 million, consisting of a $350.0 million senior unsecured term loan facility (the "Term Loan Facility") and a $150.0 million senior unsecured revolving facility (the "Revolving Facility" and together with the Term Loan Facility, the "Credit Facility").

In September 2021, we amended the Credit Agreement whereby we borrowed an additional $85.0 million, which increased the aggregate amount outstanding under the Term Loan Facility to $400.0 million. In addition, we increased the Revolving Facility capacity by $50.0 million to $200.0 million. Both the Term Loan Facility and Revolving Facility mature on September 9, 2026.

The following table summarizes borrowings under our Credit Facility and the associated interest rate.

	September 30, 2021		
	Balance	Interest Rate	Unused Line Fee
Term Loan Facility subject to a fixed interest rate	$ 260,094	1.271%	-
Term Loan Facility subject to a variable interest rate	139,906	0.890%	-
Revolving Facility subject to a variable interest rate	—	0.890%	0.10%
Total borrowings under the Credit Agreement	$ 400,000		

For more information on the interest rate swap that fixes the interest rate for a portion of our Term Loan Facility, see *Note 7. Derivative Financial Instruments*. The Term Loan Facility and Revolving Facility bear interest, at the Company's option, at a rate based on a reserve adjusted "Eurodollar Rate" or "Base Rate," as defined in the Credit Agreement, plus an applicable margin.

For all periods presented, we were in compliance with the Credit Agreement covenants. As of September 30, 2021 and December 31, 2020, we had $200.0 million and $150.0 million, respectively, available to withdraw on the Revolving Facility.

We classify the Credit Facility in Level 2 of the fair value hierarchy. The fair value approximates the outstanding balance of $400.0 million as of September 30, 2021.

The debt obligation on our Unaudited Consolidated Balance Sheets consists of the following:

	September 30, 2021	December 31, 2020
Term Loan Facility	$ 400,000	$ 323,750
Less: debt issuance costs	(2,403)	(1,704)
Total debt	397,597	322,046
Less current portion of long-term debt	(20,000)	(17,500)
Total long-term debt	$ 377,597	$ 304,546

ADVANCED ENERGY INDUSTRIES, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
(In thousands, except per share data)

Contractual maturities of the Company's debt obligations, excluding amortization of debt issuance costs, are as follows:

Year Ending December 31,		
2021 (remaining)	$	5,000
2022		20,000
2023		20,000
2024		20,000
2025		20,000
Thereafter		315,000
Total	$	400,000

Interest expense and unused line of credit fees were recorded in other income (expense), net in our Unaudited Consolidated Statements of Operations as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Interest expense	$ 1,009	$ 778	$ 2,973	$ 4,021
Amortization of debt issuance costs	420	129	669	392
Unused line of credit fees and other	41	38	116	114
Total interest expense	$ 1,470	$ 945	$ 3,758	$ 4,527

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

This management discussion and analysis should be read in conjunction with our Annual Report on Form 10-K for the year ended December 31, 2020, which was filed with the SEC on February 24, 2021.

Special Note on Forward-Looking Statements

The following discussion contains, in addition to historical information, forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Statements in this report that are not historical information are forward-looking statements. For example, statements relating to our beliefs, expectations and plans are forward-looking statements, as are statements that certain actions, conditions, or circumstances will continue. The inclusion of words such as "anticipate," "expect," "estimate," "can," "may," "might," "continue," "enables," "plan," "intend," "should," "could," "would," "likely," "potential," or "believe," as well as statements that events or circumstances "will" occur or continue, indicate forward-looking statements. Forward-looking statements involve risks and uncertainties, which are difficult to predict and many of which are beyond our control. Therefore, actual results could differ materially and adversely from those expressed in any forward-looking statements. Neither we nor any other person assumes responsibility for the accuracy and completeness of such forward-looking statements and readers are cautioned not to place undue reliance on forward-looking statements.

For additional information regarding factors that may affect our actual financial condition, results of operations and accuracy of our forward-looking statements, see the information under the caption "Risk Factors" in Part II, Item 1A of this Quarterly Report on Form 10-Q and, in Part I, Item 1A in our Annual Report on Form 10-K for the year ended December 31, 2020. We undertake no obligation to revise or update any forward-looking statements for any reason.

BUSINESS AND MARKET OVERVIEW

Advanced Energy provides highly engineered, mission-critical, precision power conversion, measurement, and control solutions to our global customers. We design, manufacture, sell and support precision power products that transform, refine, and modify the raw electrical power from the utility and convert it into various types of highly-controllable, usable power that is predictable, repeatable, and customizable. Our power solutions enable innovation in complex semiconductor and thin film plasma processes such as dry etch, strip, chemical and physical deposition, high and low voltage applications such as process control, data center computing, networking, telecommunication, analytical instrumentation, medical equipment, industrial technology and temperature-critical thermal applications such as material and chemical processing. We also supply related instrumentation products for advanced temperature measurement and control, electrostatic instrumentation products for test and measurement applications, and gas sensing and monitoring solutions for multiple industrial markets. Our network of global service support centers provides a recurring revenue opportunity as we offer repair services, conversions, upgrades, refurbishments, and used equipment to companies using our products.

Our products are sold into the Semiconductor Equipment, Industrial and Medical, Data Center Computing, and Telecom and Networking markets, and we provide market revenue data to enable tracking of trends. Advanced Energy is organized on a global, functional basis and operates in a single segment structure for power electronics conversion products.

During the first three months of 2020 we saw the spread of COVID-19 which grew into a global pandemic. Our focus on providing a healthy and safe working environment for our employees led to intermittent shutdowns of our manufacturing facilities to implement new health and safety protocols and additional investments to comply with government guidelines. During 2020 and the first nine months of 2021 there were periods when some of our manufacturing facilities were not operating or were operating at reduced capacity due to government mandates to restrict travel, maintain social distancing, and implement health and safety procedures. Additionally, ongoing restrictions related to COVID-19 and disruptions in an already challenged global supply chain limited the availability of certain materials, parts, subcomponents, and subassemblies needed for production during the first nine months of 2021, impacting our ability to ship product to meet customer demand. The shortage of critical components was caused in part by the pandemic-driven rise in consumer demand for tech goods, increased demand for electronic components used in a wide variety of industries, logistics-related disruptions in shipping, and capacity limitations at some suppliers due to COVID-19, its variants, and other factors.

During the third quarter of 2021, customer demand was again strong across our served markets. However, limited availability of certain components, primarily integrated circuits, continued to impact our ability to meet demand. Also, our manufacturing facility in Malaysia operated at reduced capacity during part of the quarter due to the government's Movement Control Order, designed to mitigate the spread of COVID-19. These factors resulted in continued growth in our backlog to record levels. We are working with our key suppliers to stabilize our parts supply and increase procurement of key components. Additionally, higher vaccine rates and reduced Malaysian government restrictions over time should allow us to increase our throughput capacity. We believe our strong demand and higher backlog levels will provide upside to current revenue levels as the supply constraints abate.

Although COVID-19 has impacted our revenues and manufacturing efficiency over the past year, COVID-19 has not materially impacted our liquidity, our ability to access capital, our ability to comply with our debt covenants or the fair value of our assets. Additionally, we believe the accommodations we have made to our work environment, including employees utilizing work-from-home arrangements where necessary, will not impact our ability to maintain effective internal controls over financial reporting.

Looking forward, we expect that for the remainder of 2021 customer demand will remain strong across our served markets; however, our ability to procure critical components to meet our customers' needs will continue to be limited by the ongoing constraints in the global supply chain. These supply constraints have led to longer lead times in procuring materials and subcomponents and, in some cases, higher costs and inventory level requirements. We have implemented measures to mitigate the impact of these higher input costs and believe that our higher levels of inventory are well matched to meet our customer demand. However, it is not clear how long this supply chain condition will continue, how quickly it may recover, or the extent to which our mitigating actions will be able to compensate for our higher costs. As such, our forward-looking projections of revenues, earnings, and cash flow may be adversely impacted if the situation continues or further deteriorates.

For additional discussion on the potential impacts of COVID-19 to the future operations of our business, please see the information under the caption "Risk Factors" in Part II, in Item 1A of this Quarterly Report on Form 10-Q and Part I, Item 1A in our Annual Report on Form 10-K for the year ended December 31, 2020.

Recent Acquisitions

On December 31, 2020, we acquired 100% of the issued and outstanding shares of capital stock of Versatile Power, Inc., which is based in Campbell, California. This acquisition added radio frequency ("RF") and programmable power supplies for medical and industrial applications to our product portfolio and further expands our presence in the medical market by adding proven technologies, deep customer relationships, expertise in medical design, and a medical-certified manufacturing center.

In January 2021, we acquired certain intangible assets related to the manufacturing of fiber optic sensing equipment for $3.6 million in cash and $2.9 million in future consideration upon the completion of transition activities.

On June 1, 2021, we acquired 100% of the issued and outstanding shares of capital stock of TEGAM, Inc., which is based in Geneva, Ohio. This acquisition added metrology and calibration instrumentation to Advanced Energy's RF process power solutions in our semiconductor and advanced industrial markets.

For additional information on the above acquisitions, see *Note 2. Acquisitions* in Part I, Item 1 "Unaudited Consolidated Financial Statements."

Semiconductor Equipment Market

Growth in the Semiconductor Equipment market is driven by growing integrated circuits content across many industries, increased demand for processing and storage in advanced applications such as artificial intelligence or autonomous vehicles, the rapid adoption of advanced mobile connectivity solutions such as 5G and enhancing existing and enabling new wireless applications. To address the long-term growing demand for semiconductor devices, the industry continues to invest in production capacities for advanced logic devices at the 7nm technology node and beyond, the latest memory devices including 3D-NAND, DRAM, and new emerging memories such as MRAM, and back-end test and advanced wafer-level packaging. The industry's transition to advanced technology nodes in logic and DRAM and to increased layers in 3D memory devices is requiring an increased number of etch and deposition process tools and higher content of our advanced power solutions per tool. As etching and deposition processes become more challenging due to increasing aspect ratios in advanced 3D devices, more advanced RF, and direct current ("DC") technologies are needed. We are meeting these challenges by providing a broader range of more complex RF and DC power solutions. Beyond etch and deposition processes, the growing complexity at the advanced nodes also drive a higher number of other processes across the fab, including inspection, metrology, thermal, ion implantation, and semiconductor test, where Advanced Energy is actively participating as a critical technology provider. In addition, our global support services group offers comprehensive local repair service, upgrade, and retrofit offerings to extend the useable life of our customers' capital equipment for additional technology generations. The acquisition of Artesyn in September 2019 expanded Advanced Energy's reach within the Semiconductor Equipment market by adding a broad range of low voltage applications as well as back-end test and assembly equipment makers.

Demand for semiconductor equipment has continued to grow through the third quarter of 2021 driven by foundry logic and certain memory investments and has surpassed prior peak levels. In addition, increased demand for semiconductor devices for a wide range of applications as global economies begin to recover is expected to drive investment in new capacity throughout the remainder of 2021.

Industrial and Medical Markets

Customers in the Industrial and Medical market incorporate our advanced power, embedded power, and measurement products into a wide variety of equipment used in applications such as advanced material fabrication, medical devices, analytical instrumentation, test and measurement equipment, robotics, horticulture, motor drives and connected light-emitting diodes.

OEM customers design equipment utilizing our process power technologies in a variety of industrial applications including glass coating, glass manufacturing, flat panel displays, photovoltaics solar cell manufacturing, and similar thin film manufacturing, including data storage and decorative, hard and optical coatings. These applications employ similar technologies to those used in the Semiconductor Equipment market to deposit films on non-semiconductor substrates. Our strategy around these applications is to leverage our thin film deposition technologies into an expanded set of new materials and applications in adjacent markets.

Advanced Energy serves the Industrial and Medical market with mission-critical power components that deliver high reliability, precise, low noise or differentiated power to the equipment they serve. Examples of products sold into the Industrial and Medical market includes high voltage products for analytical instrumentation, medical equipment, low voltage power supplies used in applications for medical devices, test and measurement, medical lasers, scientific instrumentation and industrial equipment, and power control modules and thermal instrumentation products for material fabrication, processing, and treatment. Our gas monitoring products serve multiple applications in the energy market, air quality monitoring, and automobile emission monitoring and testing. Our strategy in the Industrial and Medical market is to grow and expand our addressable market both organically through our global distribution channels and through acquisitions of products and technologies that are complimentary and adjacent to our core power conversion applications.

During the first nine months of 2021, we saw improvement in industrial markets as global economic growth resumed and our customers were able to increase capacity after governmental restrictions were relaxed during the second half of 2020. Demand for medical products during 2020 was driven by critical care applications, offset by lower investment related to discretionary procedures. More recently, critical applications have saturated while other demand has improved. In the first nine months of 2021, overall customer demand improved, but supply constraints limited the Company's ability to ship product at the level of customer demand. We expect this condition to extend into the fourth quarter of 2021. It is not clear how long these supply shortages will persist or how quickly recovery in supply may occur.

Data Center Computing Markets

Following the acquisition of Artesyn in September 2019, Advanced Energy entered the Data Center Computing market with industry-leading products and low-voltage power conversion technologies. We sell to many data center server and storage manufacturers, as well as cloud service providers and their partners. Driven by the growing adoption of cloud computing, market demand for server and storage equipment has shifted from enterprise on-premises computing to the data center. Nevertheless, with a growing presence at both cloud service providers and industry-leading data center server and storage vendors, we believe Advanced Energy is well positioned to continue to capitalize on the ongoing shift towards cloud computing. In late 2019 and through 2020, demand for our embedded power products in the Data Center Computing market increased significantly driven by share gains and a capacity ramp at hyperscale customers. In addition, we believe as a consequence of COVID-19, hyperscale demand has risen in the near term given the increased need for cloud and network applications in the current environment. Demand for hyperscale products declined sequentially during the latter part of 2020, as a result of market digestion at our existing customers following a ramp of investment earlier in the year. While demand has started to recover in the first nine months of 2021, revenue was limited by availability of parts given global supply constraints.

Telecom and Networking Markets

The acquisition of Artesyn in September 2019 provided Advanced Energy with a portfolio of products and technologies that are used across the Telecom and Networking market. Our customers include many leading vendors of wireless infrastructure equipment, telecommunication equipment and computer networking. The wireless telecom market continues to evolve with more advanced mobile standards. 5G wireless technology promises to drive substantial growth opportunities for the telecom industry as it enables new advanced applications such as autonomous vehicles and virtual/augmented reality. Telecom service providers have started to invest in 5G, and this trend is expected to drive demand of our products into the Telecom and Networking market. In datacom, demand is driven by networking investments by telecom service providers and enterprises upgrading of their network, as well as cloud data center networking investments for increased bandwidth. Demand in late 2019 and the first half of 2020 was lower as geopolitical issues and consolidation of wireless telecom providers drove slower global investment in cellular and network infrastructure. Revenue increased sequentially in the third and fourth quarters primarily as a result of modest improvement in market conditions and improved manufacturing capacity amid COVID-19. In the first nine months of 2021, revenue declined as a result of the limited availability of parts given global supply constraints and our internal decision to optimize our portfolio toward higher margin applications within the Telecom and Networking markets.

Results of Continuing Operations

The analysis presented below is organized to provide the information we believe will be helpful for understanding our historical performance and relevant trends going forward. This discussion should be read in conjunction with our "Unaudited Consolidated Financial Statements" in Part I, Item 1 of this report, including the notes thereto. Also included in the following analysis are measures that are not in accordance with U.S. GAAP. A reconciliation of the non-GAAP measures to U.S. GAAP is provided below.

The following tables set forth certain data, and the percentage of sales each item reflects, derived from our Unaudited Consolidated Statements of Operations (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Sales	$ 346,093	$ 389,521	$ 1,059,024	$ 1,044,857
Gross profit	120,039	153,785	392,575	396,320
Operating expenses	95,830	94,831	283,104	276,082
Operating income from continuing operations	24,209	58,954	109,471	120,238
Other income (expense), net	495	(6,558)	(3,674)	(11,655)
Income from continuing operations before income taxes	24,704	52,396	105,797	108,583
Provision for income taxes	3,657	6,783	10,817	15,293
Income from continuing operations, net of income taxes	$ 21,047	$ 45,613	$ 94,980	$ 93,290

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Sales	100.0 %	100.0 %	100.0 %	100.0 %
Gross profit	34.7	39.5	37.1	37.9
Operating expenses	27.7	24.3	26.7	26.4
Operating income from continuing operations	7.0	15.1	10.3	11.5
Other income (expense), net	0.1	(1.7)	(0.3)	(1.1)
Income from continuing operations before income taxes	7.1	13.5	10.0	10.4
Provision for income taxes	1.1	1.7	1.0	1.5
Income from continuing operations, net of income taxes	6.1 %	11.7 %	9.0 %	8.9 %

SALES, NET

The following tables summarize net sales and percentages of net sales, by market (in thousands):

	Three Months Ended September 30,		Change 2021 v. 2020	
	2021	2020	Dollar	Percent
Semiconductor Equipment	$ 173,441	$ 167,058	$ 6,383	3.8 %
Industrial and Medical	80,800	87,013	(6,213)	(7.1)
Data Center Computing	62,231	87,741	(25,510)	(29.1)
Telecom and Networking	29,621	47,709	(18,088)	(37.9)
Total	$ 346,093	$ 389,521	$ (43,428)	(11.1)%

	Nine Months Ended September 30,		Change 2021 v. 2020	
	2021	2020	Dollar	Percent
Semiconductor Equipment	$ 530,828	$ 446,107	$ 84,721	19.0 %
Industrial and Medical	242,412	219,877	22,535	10.2
Data Center Computing	190,843	257,240	(66,397)	(25.8)
Telecom and Networking	94,941	121,633	(26,692)	(21.9)
Total	$ 1,059,024	$ 1,044,857	$ 14,167	1.4 %

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Semiconductor Equipment	50.1 %	42.9 %	50.1 %	42.7 %
Industrial and Medical	23.3	22.3	22.9	21.0
Data Center Computing	18.0	22.5	18.0	24.6
Telecom and Networking	8.6	12.2	9.0	11.6
Total	100.0 %	100.0 %	100.0 %	100.0 %

SALES

Sales decreased $43.4 million, or 11.1%, to $346.1 million for the three months ended September 30, 2021 due primarily to a reduction in Data Center Computing shipments driven by supply constraints, which limited our ability to ship sufficiently to meet customer demand and also due to a reduction in Telecom and Networking due to portfolio optimization and production limitations due to supply constraints. Sales increased $14.2 million, or 1.4%, for the nine months ended September 30, 2021 as compared to the same periods in 2020. The increase in sales year to date was primarily due to increased demand in the Semiconductor Equipment and Industrial and Medical markets, offset by lower sales from Data Center Computing products due in part to digestion of equipment at key accounts following strong revenue last year and more recently to supply constraints on key parts and components. In addition, the first half of 2020 was negatively impacted by factory shutdowns related to COVID-19.

Sales in the Semiconductor Equipment market increased $6.4 million, or 3.8%, for the three months ended September 30, 2021 and $84.7 million, or 19.0%, for the nine months ended September 30, 2021 as compared to the same period in 2020. The increase in sales during 2021 is primarily due to an overall increase in demand for semiconductor equipment used in deposition and etch applications and increasing power content in semiconductor manufacturing tools.

Sales in the Industrial and Medical market decreased $6.2 million, or 7.1%, for the three months ended September 30, 2021 and increased $22.5 million, or 10.2%, for the nine months ended September 30, 2021 as compared to the same periods in 2020. Our customers in this market are primarily global and regional original equipment and device manufacturers. The increase in sales year to date was primarily due to improving macroeconomic conditions and the continued recovery from the COVID-19 pandemic within general industrial markets, while the three-month decline was due primarily to supply constraints on key parts and components.

Sales in the Data Center Computing market decreased $25.5 million, or 29.1%, for the three months ended September 30, 2021 and $66.4 million, or 25.8%, for the nine months ended September 30, 2021 as compared to the same periods in 2020. The decrease in Data Center Computing market sales is primarily due to supply constraints which limited our ability to ship sufficiently to meet customer demand.

Sales in the Telecom and Networking market decreased $18.1 million, or 37.9%, for the three months ended September 30, 2021 and $26.7 million, or 21.9%, for the nine months ended September 30, 2021 as compared to the same periods in 2020. The decrease in sales was due to in part to our decision to optimize our product portfolio towards higher margin applications and production limitations due to supply constraints. Over time, we expect that 5G infrastructure investments and upgrades to enterprise networks will drive growth in this market.

Backlog

Our backlog was $771.4 million at September 30, 2021 as compared to $534.7 million at June 30, 2021 and $290.7 million at December 31, 2020. This reflects strong demand for our products as our markets and macro economies recover as well as longer lead times as some customers have placed orders into future quarters to accommodate supply constraints for certain components.

GROSS PROFIT

For the three months ended September 30, 2021, gross profit decreased $33.7 million to $120.0 million, or 34.7% of sales, compared to the same period in 2020. For the three months ended September 30, 2020, gross profit was $153.8 million, or 39.5% of sales. The decrease in gross profit as a percentage of revenue for the three months ended September 30, 2021 is driven by lower productivity resulting from supply constraints and COVID-19 capacity restrictions, particularly in Malaysia, and higher freight and inventory procurement costs, offset partially by a favorable sales mix. For the nine months ended September 30, 2021, gross profit decreased $3.7 million to $392.6 million, or 37.1% of sales, as compared to gross profit of $396.3 million, or 37.9% of sales, for the same period in 2020. The decrease in gross profit as a percentage of revenue for the nine months ended September 30, 2021 is largely related to increased material and freight costs and productivity inefficiencies resulting from supply constraints and COVID-19 capacity restrictions and the transition of our Shenzhen, PRC manufacturing into Penang, Malaysia, partly offset by increased volume and sales mix. Additionally, the nine month period ended September 30, 2020 included $5.2 million in additional costs related to the increase in fair market value of Artesyn acquired inventory.

OPERATING EXPENSES

Operating expenses increased $1.0 million to $95.8 million, or 27.7% of sales, for the three months ended September 30, 2021 from $94.8 million, or 24.3% of sales, for the same period in 2020. The increase in operating expenses is primarily due to increased research and development expenses, partially offset by a reduction in selling, general and administrative expenses. Operating expenses increased $7.0 million to $283.1 million, or 26.7% of sales, for the nine months ended September 30, 2021 from $276.1 million, or 26.4% of sales, for the same period in 2020. The increase in operating expenses for the nine month period ended September 30, 2021 is primarily due to increased investment in research and development, partially offset by a reduction in restructuring costs.

The following tables summarize our operating expenses (in thousands) and as a percentage of sales for the periods indicated:

	Three Months Ended September			
	2021		2020	
Research and development	$ 40,578	11.7 %	$ 36,807	9.4 %
Selling, general, and administrative	48,373	14.0	51,481	13.2
Amortization of intangible assets	5,607	1.6	5,049	1.3
Restructuring charges	1,272	0.4	1,494	0.4
Total operating expenses	$ 95,830	27.7 %	$ 94,831	24.3 %

	Nine Months Ended September 30,			
	2021		2020	
Research and development	$ 120,865	11.4 %	$ 107,432	10.3 %
Selling, general, and administrative	143,214	13.5	145,646	13.9
Amortization of intangible assets	16,504	1.6	15,064	1.4
Restructuring charges	2,521	0.2	7,940	0.8
Total operating expenses	$ 283,104	26.7 %	$ 276,082	26.4 %

Research and Development

We perform research and development ("R&D") of products to develop new or emerging applications, technological advances to provide higher performance, lower cost, or other attributes that we may expect to advance our customers’ products. We believe that continued development of technological applications, as well as enhancements to existing products and related software to support customer requirements, are critical for us to compete in the markets we serve. Accordingly, we devote significant personnel and financial resources to the development of new products and the enhancement of existing products, and we expect these investments to continue.

Research and development expenses increased $3.8 million for the three months ended September 30, 2021 and increased $13.4 million for the nine months ended September 30, 2021 compared to the same period in 2020. The increase in research and development expense is related to increased headcount and associated costs, outside technical services, and material costs as we invested in new programs to maintain and increase our technological leadership and provide solutions to our customers’ evolving needs.

Selling, General and Administrative

Our selling expenses support domestic and international sales and marketing activities that include personnel, trade shows, advertising, third-party sales representative commissions, and other selling and marketing activities. Our general and administrative expenses support our worldwide corporate, legal, tax, financial, governance, administrative, information systems, and human resource functions in addition to our general management, including acquisition-related activities.

Selling, general and administrative ("SG&A") expenses decreased $3.1 million for the three months ended September 30, 2021 and decreased $2.4 million for the nine months ended September 30, 2021 compared to the same periods in 2020. The decrease in SG&A for the three month period ended September 30, 2021 is principally related to a decrease in variable pay as well as cost saving initiatives such as decreased employee and related costs and professional services. The decrease in SG&A for the nine month period ended September 30, 2021 is principally related to decreased variable pay, employee and related costs, and facility costs, primarily associated with synergy activities. These decreases were partially offset by increased stock compensation in the first quarter of 2021, primarily due to accelerated recognition of compensation related to our change in CEO.

Amortization of Intangibles

Amortization expense increased $0.6 million to $5.6 million during the three months ended September 30, 2021 and increased $1.4 million to $16.5 million during the nine months ended September 30, 2021 compared to the same periods in 2020. The increase is primarily driven by incremental amortization of newly acquired intangible assets. For additional information, see *Note 12. Intangible Assets* in Part I, Item 1 “Unaudited Consolidated Financial Statements.”

Restructuring

Restructuring charges relate to previously announced management plans to optimize our manufacturing footprint to lower cost regions, improvements in operating efficiencies, and synergies related to acquisitions. For additional information, see *Note 13. Restructuring Costs* in Part I, Item 1 "Unaudited Consolidated Financial Statements."

OTHER INCOME (EXPENSE), NET

Other income (expense), net consists primarily of interest income and expense, foreign exchange gains and losses, gains and losses on sales of fixed assets, and other miscellaneous items.

For the three months ended September 30, 2021, other income (expense), net was $0.5 million compared to other income (expense), net of ($6.6) million for the same period in 2020. The increase in other income (expense) is primarily related to favorable impacts from foreign exchange rates of $1.8 million in the three month period ended September 30, 2021 as compared to unfavorable impacts from foreign exchange rates of $4.3 million in the comparable 2020 period. For the nine months ended September 30, 2021, other income (expense), net was ($3.7) million compared to other income (expense) of ($11.7) million for the same period in 2020. The change between periods is primarily due to decreased interest expense related to our term note resulting from our interest rate swap agreement executed in April 2020 and more favorable impacts from foreign exchange rate changes.

PROVISION FOR INCOME TAXES

The following table summarizes tax expense (in thousands) and the effective tax rate for our income from continuing operations:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Income from continuing operations, before income taxes	$ 24,704	$ 52,396	$ 105,797	$ 108,583
Provision for income taxes	$ 3,657	$ 6,783	$ 10,817	$ 15,293
Effective tax rate	14.8 %	12.9 %	10.2 %	14.1 %

Our effective tax rates differ from the U.S. federal statutory rate of 21% for the three and nine months ended September 30, 2021 and 2020, respectively, primarily due to the benefit of earnings in foreign jurisdictions which are subject to lower tax rates, partially offset by net U.S. tax on foreign operations and withholding taxes. The effective tax rate for the first nine months of 2021 was lower than the same period in 2020 primarily due to the mix of discrete events between the two periods.

Our future effective income tax rate depends on various factors, such as changes in tax laws, regulations, accounting principles, or interpretations thereof, and the geographic composition of our pre-tax income. We carefully monitor these factors and adjust our effective income tax rate accordingly.

Non-GAAP Results

Management uses non-GAAP operating income and non-GAAP EPS to evaluate business performance without the impacts of certain non-cash charges and other charges which are not part of our usual operations. We use these non-GAAP measures to assess performance against business objectives, make business decisions, including developing budgets and forecasting future periods. In addition, management's incentive plans include these non-GAAP measures as criteria for achievements. These non-GAAP measures are not in accordance with U.S. GAAP and may differ from non-GAAP methods of accounting and reporting used by other companies. However, we believe these non-GAAP measures provide additional information that enables readers to evaluate our business from the perspective of management. The presentation of this additional information should not be considered a substitute for results prepared in accordance with U.S. GAAP.

The non-GAAP results presented below exclude the impact of non-cash related charges, such as stock-based compensation and amortization of intangible assets. In addition, they exclude discontinued operations and other non-recurring items such as acquisition-related costs and restructuring expenses, as they are not indicative of future performance. The tax effect of our non-GAAP adjustments represents the anticipated annual tax rate applied to each non-GAAP adjustment after consideration of their respective book and tax treatments and effect of adoption of the Tax Cuts and Jobs Act.

Reconciliation of non-GAAP measure - operating expenses and operating income from continuing operations, excluding certain items (in thousands)	**Three Months Ended September 30,**		**Nine Months Ended September 30,**	
	2021	**2020**	**2021**	**2020**
Gross profit from continuing operations, as reported	$ 120,039	$ 153,785	$ 392,575	$ 396,320
Adjustments to gross profit:				
Stock-based compensation	218	67	783	445
Facility expansion, relocation costs and other	1,357	1,095	5,192	3,608
Acquisition-related costs	3,259	—	3,351	5,356
Non-GAAP gross profit	124,873	154,947	401,901	405,729
Non-GAAP gross margin	36.1%	39.8%	38.0%	38.8%
Operating expenses from continuing operations, as reported	95,830	94,831	283,104	276,082
Adjustments:				
Amortization of intangible assets	(5,607)	(5,049)	(16,504)	(15,064)
Stock-based compensation	(3,456)	(3,714)	(12,036)	(9,221)
Acquisition-related costs	(1,768)	(5,214)	(6,124)	(10,597)
Facility expansion, relocation costs and other	(98)	(415)	(212)	(1,770)
Restructuring charges	(1,272)	(1,494)	(2,521)	(7,940)
Non-GAAP operating expenses	83,629	78,945	245,707	231,490
Non-GAAP operating income	$ 41,244	$ 76,002	$ 156,194	$ 174,239
Non-GAAP operating margin	11.9%	19.5%	14.7%	16.7%

Reconciliation of non-GAAP measure - income from continuing operations, excluding certain items (in thousands, except per share amounts)	**Three Months Ended September 30,**		**Nine Months Ended September 30,**	
	2021	**2020**	**2021**	**2020**
Income from continuing operations, less non-controlling interest, net of income taxes	$ 21,041	$ 45,577	$ 94,910	$ 93,255
Adjustments:				
Amortization of intangible assets	5,607	5,049	16,504	15,064
Acquisition-related costs	5,027	5,214	9,475	15,953
Facility expansion, relocation costs, and other	1,455	1,510	5,404	5,378
Restructuring charges	1,272	1,494	2,521	7,940
Unrealized foreign currency (gain) loss	(2,092)	3,540	(3,409)	4,598
Acquisition-related costs and other included in other income (expense), net	(79)	625	907	625
Tax effect of non-GAAP adjustments	(1,036)	(2,115)	(4,363)	(6,080)
Non-GAAP income, net of income taxes, excluding stock-based compensation	31,195	60,894	121,949	136,733
Stock-based compensation, net of taxes	2,811	2,892	9,809	7,425
Non-GAAP income, net of income taxes	$ 34,006	$ 63,786	$ 131,758	$ 144,158
Non-GAAP diluted earnings per share	$ 0.89	$ 1.66	$ 3.42	$ 3.74

Impact of Inflation

In recent years, inflation has not had a significant impact on our operations. However, more recently we are experiencing price increases in select components driven by higher global demand and supply chain disruptions. We continuously monitor operating price increases, particularly in connection with the supply of component parts used in our manufacturing process. To the extent permitted by competition, we pass increased costs on to our customers by increasing sales prices over time. From time to time, we may also reduce prices to customers to decrease sales prices due to reductions in the cost structure of our products from cost improvement initiatives and decreases in component part prices**.**

Liquidity and Capital Resources

Liquidity

We believe that adequate liquidity and cash generation is important to the execution of our strategic initiatives. Our ability to fund our operations, acquisitions, capital expenditures, and product development efforts may depend on our ability to generate cash from operating activities which is subject to future operating performance, as well as general economic, financial, competitive, legislative, regulatory, and other conditions, some of which may be beyond our control. Our primary sources of liquidity are our available cash, investments, cash generated from current operations, and available borrowing capacity under the Revolving Facility.

At September 30, 2021, we had $550.8 million in cash, cash equivalents, and marketable securities.

We believe the above sources of liquidity will be adequate to meet anticipated working capital needs, capital expenditures, contractual obligations, debt repayment, share repurchase programs, and dividends for the next twelve months and on a long-term basis. We may, however, depending upon the number or size of additional acquisitions, seek additional financing from time to time.

Credit Facility

In September 2019, in connection with the Artesyn Acquisition Agreement, we entered into a credit agreement ("Credit Agreement") that provided aggregate financing of $500.0 million, consisting of a $350.0 million senior unsecured term loan facility (the "Term Loan Facility") and a $150.0 million senior unsecured revolving facility (the "Revolving Facility" and together with the Term Loan Facility, the "Credit Facility").

In September 2021, we amended the Credit Agreement whereby we borrowed an additional $85.0 million, which increased the aggregate amount outstanding under the Term Loan Facility to $400.0 million. In addition, we increased the Revolving Facility capacity by $50.0 million to $200.0 million. Both the Term Loan Facility and Revolving Facility mature on September 9, 2026.

At September 30, 2021, we had $200.0 million in available funding under the Revolving Facility. The Term Loan Facility requires quarterly repayments of $5.0 million plus accrued interest, with the remaining balance due in September 2026. For more information on the Credit Facility, see *Note 19. Credit Facility* and *Note 7. Derivative Financial Instruments* in Part I, Item 1 "Unaudited Consolidated Financial Statements."

Stock Repurchase

To execute the repurchase of shares of common stock, the Company periodically enters into stock repurchase agreements. The following table summarizes these repurchases:

(in thousands, except per share amounts)	Three Months Ended September 30, 2021	Three Months Ended September 30, 2020	Nine Months Ended September 30, 2021	Nine Months Ended September 30, 2020
Amount paid and accrued to repurchase shares	$ 52,555	$ 4,331	$ 59,058	$ 11,579
Number of shares repurchased	605	73	677	243
Average repurchase price per share	$ 86.93	$ 59.70	$ 87.30	$ 47.70
Remaining authorized by Board of Directors for future repurchases as of period end	$ 147,444	$ 38,420	$ 147,444	$ 38,420

On July 29, 2021, the Board of Directors approved an increase to the share repurchase program, which authorized the Company to repurchase up to $200 million in shares of our common stock with no time limitation.

Dividends

In December 2020, the Company's Board of Directors ("the Board") approved a dividend program under which we began paying and intend to pay a quarterly cash dividend of $0.10 per share of capital stock. In March 2021, we paid the first quarterly cash dividend since our inception as a public company. During the nine months ended September 30, 2021, we paid cash dividends totaling $11.6 million. Future dividend payments are subject to the Board's approval.

Cash Flows

A summary of our cash provided by and used in operating, investing, and financing activities is as follows (in thousands):

	Nine Months Ended September 30, 2021	Nine Months Ended September 30, 2020
Net cash from operating activities from continuing operations	$ 106,410	$ 135,032
Net cash from operating activities from discontinued operations	(523)	(659)
Net cash from operating activities	105,887	134,373
Net cash from investing activities from continuing operations	(39,121)	(27,253)
Net cash from financing activities from continuing operations	3,554	(26,155)
Effect of currency translation on cash	(2,765)	1,571
Increase in cash and cash equivalents	67,555	82,536
Cash and cash equivalents, beginning of period	480,368	346,441
Cash and cash equivalents, end of period	$ 547,923	$ 428,977

Net Cash From Operating Activities

Net cash from operating activities from continuing operations for the nine months ended September 30, 2021 was $106.4 million, as compared to $135.0 million for the same period in 2020. The decrease of $28.6 million in net cash flows from operating activities, as compared to the same period in 2020, is due primarily to an increase in inventory levels as we attempt to mitigate supply constraints. This was partly offset by changes in other working capital balances, an increase in depreciation and amortization expense, and an increase in stock-based compensation.

Net Cash From Investing Activities

Net cash from investing activities for the nine months ended September 30, 2021 was ($39.1) million, driven by the following:

- ($22.7) million related to investment in capacity and facilities as we continue to integrate certain locations;
- ($18.7) million for business combinations; and
- $2.3 million related to receipts on notes receivable and proceeds from sale of assets.

Net cash from investing activities for the nine months ended September 30, 2020 was ($27.3) million and primarily related to investment in facilities and capacity.

Net Cash From Financing Activities

Net cash from financing activities for the nine months ended September 30, 2021 was $3.6 million and included

- $83.7 million in proceeds from borrowings, net of debt-issuance costs paid;
- ($56.6) million related to repurchases of our common stock;
- ($11.6) million for dividend payments;
- ($8.8) million for repayment of long-term debt; and
- ($3.1) million in net payments related to stock-based award activities.

Net cash from financing activities for the nine months ended September 30, 2020 was ($26.2) million and included the following:

- ($13.1) million for repayment of long-term debt;
- ($11.6) million related to repurchases of our common stock; and
- ($1.5) million in net payments related to stock-based award activities.

Effect of Currency Translation on Cash

During the nine months ended September 30, 2021, currency translation had an unfavorable impact primarily due to a stronger U.S. dollar. See "Foreign Currency Exchange Rate Risk" in Part I, Item 3 of this Form 10-Q for more information**.**

Critical Accounting Policies and Estimates

The preparation of financial statements and related disclosures in conformity with U.S. GAAP requires us to make judgments, assumptions and estimates that affect the amounts reported in the consolidated financial statements and accompanying notes. *Note 1. Operation and Summary of Significant Accounting Policies and Estimates* to the consolidated financial statements in our Annual Report on Form 10-K for the year ended December 31, 2020 describes the significant accounting policies and methods used in the preparation of our consolidated financial statements. Our critical accounting estimates, discussed in the "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2020, include estimates for allowances for doubtful accounts, determining useful lives for depreciation and amortization, the valuation of assets and liabilities acquired in business combinations, assessing the need for impairment charges for identifiable intangible assets and goodwill, establishing warranty reserves, accounting for income taxes, and assessing excess and obsolete inventories.

Such accounting policies and estimates require significant judgments and assumptions to be used in the preparation of the consolidated financial statements and actual results could differ materially from the amounts reported based on variability in factors affecting these estimates.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risk and Risk Management

In the normal course of business, we have exposures to foreign exchange rate risk related to our foreign operations and foreign currency transactions and interest rate risk from our investments and credit facility.

See the "Risk Factors" set forth in Part I, Item 1A of our Annual Report on Form 10-K and Part II, Item 1A of this Form 10-Q for more information about the market risks to which we are exposed. There have been no material changes in our exposure to market risk from December 31, 2020.

Foreign Currency Exchange Rate Risk

We are impacted by changes in foreign currency exchange rates through sales and purchasing transactions when we sell products and purchase materials in currencies different from the currency in which product and manufacturing costs were incurred.

Our reported financial results of operations, including the reported value of our assets and liabilities, are also impacted by changes in foreign currency exchange rates. Assets and liabilities of substantially all our subsidiaries outside the U.S. are translated at period end rates of exchange for each reporting period. Operating results and cash flow statements are translated at weighted-average rates of exchange during each reporting period. Although these translation changes have no immediate cash impact, the translation changes may impact future borrowing capacity, and overall value of our net assets.

The functional currencies of our worldwide facilities primarily include the USD, EUR, KRW, TWD, ILS, GBP, and CNY. Our purchasing and sales activities are primarily denominated in the USD, JPY, EUR, and CNY.

Currency exchange rates vary daily and often one currency strengthens against the USD while another currency weakens. Because of the complex interrelationship of the worldwide supply chains and distribution channels, it is difficult to quantify the impact of a change in one or more particular exchange rates.

As currencies fluctuate against each other we are exposed to foreign currency exchange rate risk on sales, purchasing transactions, and labor. Exchange rate fluctuations could require us to increase prices to foreign customers, which could result in lower net sales by us to such customers. Alternatively, if we do not adjust the prices for our products in response to unfavorable currency fluctuations, our results of operations could be adversely impacted. Changes in the relative buying power of our customers may impact sales volumes either positively or negatively.

Acquisitions are a large component of our capital deployment strategy. A significant number of acquisition target opportunities are located outside the U.S. and their value may be denominated in foreign currency. Changes in exchange rates therefore may have a material impact on their valuation in USD and may impact our view of their attractiveness.

Table of Contents

The change in key currency rates were as follows:

From	To	Nine Months Ended September 30, 2021	2020
Canadian Dollar (CAD)	USD	0.5 %	(2.6)%
Swiss Franc (CHF)	USD	(5.3)%	5.0 %
Chinese Yuan (CNY)	USD	1.3 %	2.4 %
Danish Krone (DKK)	USD	(5.5)%	4.9 %
Euro (EUR)	USD	(5.6)%	4.5 %
Pound Sterling (GBP)	USD	(1.3)%	(2.4)%
Israeli New Shekel (ILS)	USD	(0.4)%	0.6 %
India Rupee (INR)	USD	(1.5)%	(3.2)%
Japanese Yen (JPY)	USD	(7.2)%	2.9 %
South Korean Won (KRW)	USD	(8.2)%	(1.0)%
Philippines Peso (PHP)	USD	(5.9)%	4.6 %
Singapore Dollar (SGD)	USD	(2.6)%	(1.6)%
New Taiwan Dollar (TWD)	USD	0.9 %	3.4 %

From time to time, we may enter into foreign currency exchange rate contracts to hedge against changes in foreign currency exchange rates on assets and liabilities expected to be settled at a future date, including foreign currency, which may be required for a potential foreign acquisition. Market risk arises from the potential adverse effects on the value of derivative instruments that result from a change in foreign currency exchange rates. We may enter into foreign currency forward contracts to manage the exchange rate risk associated with intercompany debt denominated in nonfunctional currencies. We minimize our market risk applicable to foreign currency exchange rate contracts by establishing and monitoring parameters that limit the types and degree of our derivative contract instruments. We enter into derivative contract instruments for risk management purposes only. We do not enter into or issue derivatives for trading or speculative purposes.

Interest Rate Risk

Our market risk exposure relates to changes in interest rates in our investment portfolio. We generally place our investments with high-credit quality issuers. By policy, we are averse to principal loss and seek to protect and preserve our invested funds by limiting default risk, market risk, and reinvestment risk.

As of September 30, 2021, our investments consisted primarily of certificates of deposit with maturity of less than one year. As a measurement of the sensitivity of our portfolio and if our investment portfolio balances remain constant, a hypothetical decrease of 100 basis points (1%) in interest rates would decrease annual pre-tax earnings by a nominal amount.

The following table summarizes borrowings (in thousands) under our Credit Facility and the associated interest rate.

	September 30, 2021 Balance	Interest Rate	Unused Line Fee
Term Loan Facility subject to a fixed interest rate	$ 260,094	1.271%	-
Term Loan Facility subject to a variable interest rate	139,906	0.890%	-
Revolving Facility subject to a variable interest rate	—	0.890%	0.10%
Total borrowings under the Credit Agreement	$ 400,000		

For more information on the Term Loan Facility see *Note 19. Credit Facility* in Part I, Item 1 "Unaudited Consolidated Financial Statements." For more information on the interest rate swap that fixes the interest rate for a portion of our Term Loan Facility, see *Note 7. Derivative Financial Instruments* in Part I, Item 1 "Unaudited Consolidated Financial Statements." The Term Loan Facility and Revolving Facility bear interest, at the option of the Company, at a rate based on a reserve adjusted "Eurodollar Rate" or "Base Rate," as defined in the Credit Agreement, plus an applicable margin.

Our interest payments are impacted by interest rate fluctuations. With respect the portion of our Credit Facility that is subject a variable interest rate, a hypothetical increase of 100 basis points (1%) in interest rates would increase our commitments by an immaterial amount. A change in interest rates does not have a material impact upon our future earnings and cash flow for fixed rate debt. However, increases in interest rates could impact our ability to refinance existing maturities and acquire additional debt on favorable terms.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We have established disclosure controls and procedures, which are designed to ensure that information required to be disclosed in reports filed or submitted under the Securities Exchange Act of 1934 ("Act") is recorded, processed, summarized, and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. These disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in the reports that we file or submit under the Act is accumulated and communicated to management, including our Principal Executive Officer (Stephen D. Kelley, President and Chief Executive Officer) and Principal Financial Officer (Paul Oldham, Chief Financial Officer), as appropriate, to allow timely decisions regarding required disclosures.

As of the end of the period covered by this report, we conducted an evaluation, with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the disclosure controls and procedures pursuant to the Exchange Act Rule 13a-15(b). Based upon this evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of September 30, 2021. The conclusions of the Chief Executive Officer and Chief Financial Officer from this evaluation were communicated to the Audit Committee. We intend to continue to review and document our disclosure controls and procedures, including our internal controls over financial reporting, and may from time to time make changes aimed at enhancing their effectiveness and to ensure that our systems evolve with our business.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting that occurred during the quarter covered by this Form 10-Q that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are involved in disputes and legal actions arising in the normal course of our business. Since December 31, 2020, there have been no material developments in legal proceedings in which we are involved. For a description of previously reported legal proceedings refer to Part I, Item 3, "Legal Proceedings" of our Annual Report on Form 10-K for the year ended December 31, 2020.

ITEM 1A. RISK FACTORS

Our business, financial condition, operating results, and cash flows can be impacted by a number of factors, including, but not limited to, those set forth below, any of which could cause our results to be adversely impacted and could result in a decline in the value or loss of an investment in our common stock. Other factors may also exist that we cannot anticipate or that we currently do not consider to be material based on information that is currently available. These risks and uncertainties have the potential to materially affect our business, financial condition, results of operations, cash flows and future results. Such risks and uncertainties may also impact the accuracy of forward-looking statements included in this report and other reports we file with the Securities and Exchange Commission.

COVID-19, natural disasters, and related risks

COVID-19 could further materially adversely affect our business, workforce, supply chain, results of operations, financial condition and/or cash flows.

The ongoing COVID-19 pandemic has adversely impacted our ability (a) to manufacture, test, service and ship our products, (b) to get required materials and sub-assemblies to build and service our products and (c) to staff labor and management for manufacturing, research and development, supply chain, service, and administrative operations. Further, we may continue to experience adverse impact with our global supply chain partners, critical subassembly suppliers, parts distributors, and transportation service providers, which may result in increased costs, material shortages, and the inability to fully meet our customers' demand. For example, in the first nine months of 2021 the combination of increased demand for semiconductor and other select components and the ongoing impact of COVID-19 has affected global electronics markets and impacted our ability to ship to our full demand levels. In addition, we have experienced higher input costs as we have incurred material premiums, expedite fees, price increases, and higher logistic costs. We expect these conditions will continue through the remainder of 2021 and will continue to adversely impact our ability to ship products to customers. After 2021, it is not known how long or significant this shortage will be, but it may continue to impact our results. Further foreign and domestic government actions restricting travel, commerce and gathering will adversely affect our manufacturing locations. COVID-19 has also resulted in economic recessions and high unemployment in many countries which could negatively impact future customer purchases of our products. In addition, a portion of our workforce continues to work remotely. While we have been successful in transitioning to this remote environment, the long-term impact on productivity and innovation is not yet clear. As a result, COVID-19 and its variants could adversely impact our near-term and long-term revenues, earnings and cash flow and could require further expenditures. This situation continues to evolve, and other impacts may arise that we are not aware of currently. We have an active rapid response team to mitigate risks we are aware of currently and as they arise.

Our results of operations could be affected by natural disasters and other events in the locations in which we or our customers or suppliers operate.

We have manufacturing and other operations in locations subject to natural occurrences such as severe weather and geological events including earthquakes or tsunamis that could disrupt operations. In addition, our suppliers and customers also have operations in such locations. A natural disaster, fire, explosion, or other event that results in a prolonged disruption to our operations, or the operations of our customers or suppliers, may materially adversely affect our business, results of operations, or financial condition.

Industry-related risks

Our operations in the People's Republic of China (PRC) and the Asia Pacific region are subject to significant political and economic uncertainties over which we have little or no control and we may be unable to alter our business practice in time to avoid reductions in revenues.

A significant portion of our operations outside the United States are located in the PRC, which exposes us to risks, such as exchange controls and currency restrictions, changes in local economic conditions, changes in customs regulations and tariffs, changes in tax policies, changes in PRC laws and regulations, possible expropriation or other PRC government actions, and unsettled political conditions including potential changes in U.S. policy regarding overseas manufacturing. At various times during recent years, the U.S. and PRC have had significant disagreements over geopolitical, trade and economic issues. Controversies may arise in the future between these two countries. Any escalating political controversies between the U.S. and PRC, whether or not directly related to our business, could have a material adverse effect on our operations, business, results of operations, and financial condition. See "We are exposed to risks associated with worldwide financial markets and the global economy" risk factor below.

Additionally, there is inherent risk, based on the complex relationships among PRC, Hong Kong, Taiwan, and the United States, that political, diplomatic, and national security influences might lead to trade, technology, or capital disputes, and/or disruptions, in particular those affecting the semiconductor industry. This would adversely affect our business with PRC, Hong Kong, and/or Taiwan and perhaps the entire Asia Pacific region or global economy.

Actions by the Chinese government extending its territorial claims, such as the recent passage of the national security law in Hong Kong and the potential establishment of an Air Defense Identification Zone over the South China Sea, raises the fear of conflict that could result in international reprisal. Actions by the U.S. government on trade policy against the PRC and companies like Huawei Technologies Co., Ltd. have also escalated tensions. Lastly, the recent U.S. and PRC consulate closures and the continuing Hong Kong political unrest is creating more uncertainty. Should the PRC take any actions against Taiwan, we could see additional risks to diplomatic and trade relations in the region. Given our expanded presence in the PRC and Hong Kong, the Company's business results, operations and financial condition could be adversely affected by these developments and other changes to political, diplomatic, and social conditions. Moreover, PRC's policies towards, and treatment of, U.S. companies operating in PRC and Hong Kong could change quickly resulting in an adverse impact on the Company.

The industries in which we compete are subject to volatile and unpredictable cycles.

As a supplier to the global semiconductor equipment, telecom, networking, data center computing, industrial, and medical industries, we are subject to business cycles, the timing, length, and volatility of which can be difficult to predict. Certain of these industries historically have been cyclical due to sudden changes in customers' manufacturing capacity requirements and spending, which depend in part on capacity utilization, demand for customers' products, inventory levels relative to demand, and access to affordable capital. These changes have affected the timing and amounts of customers' purchases and investments in technology, and continue to affect our orders, net sales, operating expenses, and net income. We may not be able to respond adequately or quickly to the declines in demand by reducing our costs. We may be required to record significant reserves for excess and obsolete inventory as demand for our products changes.

To meet rapidly changing demand in each of the industries we serve, we must effectively manage our resources and production capacity. During periods of decreasing demand for our products, we must be able to appropriately align our cost structure with prevailing market conditions, effectively manage our supply chain, and motivate and retain key employees. During periods of increasing demand, we must have enough manufacturing capacity and inventory to fulfill customer orders, effectively manage our supply chain, and attract, retain, and motivate enough qualified individuals. If we are not able to timely and appropriately adapt to changes in our business environment or to accurately assess where we are positioned within a business cycle, our business, financial condition, or results of operations may be materially and adversely affected. For example, following record levels of demand in the first half of 2018, the Semiconductor Equipment market experienced a decline, and, as a result, Advanced Energy's revenue from the Semiconductor Equipment market declined 24.5% during 2019, as compared to 2018. Although the Semiconductor Equipment market improved during the fourth quarter of 2019 and throughout 2020, it is unclear how long this recovery will last. In addition, the market may be characterized in the future with more "mini-ramps" rather than sustained growth periods as experienced during 2015-2017 given market dynamics, inventory levels, and geopolitical changes. In addition, our Data Center Computing and Telecom and Networking markets are characterized by large program investments, which can cause variations in quarterly or annual revenues. For example, during 2020 our growth in Data Center Computing and Telecom and Networking was driven by share gains at specific customer accounts. Towards the end of 2020, we began to experience a period of digestion by our major customers that continued into early 2021, resulting in lower demand. We expect overall demand levels may continue to fluctuate each quarter through these business cycles.

We must achieve design wins to retain our existing customers and to obtain new customers. Even though design wins may be achieved, they may not necessarily result in substantial sales.

Driven by continuing technology migration and changing customers demand, the markets we serve are constantly changing in terms of advancement in applications, core technology and competitive pressures. New products we design for capital equipment manufacturers typically have a lifespan of five to ten years. Increasingly, we are required to accelerate our investment in research and development to meet time-to-market, performance and technology adoption cycle needs of our customers simply to compete for design wins. Given such up-front investments we make to develop, evaluate, and qualify products in the design win process, our success and future growth depend on our products being designed into our customers new generations of equipment as they develop new technologies and applications. We must work with these manufacturers early in their design cycles to modify, enhance and upgrade our products or design new products that meet the requirements of their new systems. The design win process is highly competitive, and we may win or lose new design wins for our existing customers or new customers next generations of equipment. If existing or new customers do not choose us during the design win process, our market share will be reduced, the potential revenues related to the lifespan of our customers' products, which can be five to ten years, will not be realized, and our business, financial condition and results of operations would be materially and adversely impacted.

Business model, acquisitions, and capital structure related risks

Despite the continued evolution of our manufacturing footprint our product lines are manufactured at only a few sites and our sites are not generally interchangeable.

Our power products for the semiconductor industry are manufactured in Shenzhen, PRC and Penang, Malaysia. Our high voltage products are manufactured in Ronkonkoma and Lockport, New York, Littlehampton, United Kingdom and Shenzhen, PRC. Our thermal instrumentation products are manufactured in Vancouver, Washington, Littlehampton, United Kingdom and Frankfurt, Germany. Our pyrometry solutions are manufactured in Ballerup, Denmark, Frankfurt, Germany, Magdeburg, Germany and Vancouver, Washington. Our telecom, networking, data center computing, and medical products are manufactured in Zhongshan, PRC, Rosario, Philippines and Santa Rosa, Philippines. Most facilities are under operating lease and interruptions in operations could be caused by early termination of existing leases by landlords or failure by landlords to renew existing leases upon expiration, including the possibility that suitable operating locations may not be available in proximity to existing facilities which could result in labor or supply chain risks. Each facility manufactures different products, and therefore, is not interchangeable. Natural, uncontrollable occurrences or other operational issues at any of our manufacturing facilities could significantly reduce or disrupt our productivity at such site and could prevent us from meeting our customers' requirements in a timely manner, or at all.

Additionally, we have a plan to relocate our Shenzhen, PRC manufacturing facility no later than June 2022. As a result, we are investing in a dual manufacturing facility in Penang, Malaysia capable of manufacturing our semiconductor and other products. We believe this investment will help to mitigate our exposure to regional risks, improve our business continuity profile and lower costs over time. We opened this facility in 2020; however, it may take additional time to realize the facility's full production capacity given the impact of COVID-19 and supply chain constraints. As this facility ramps volume, we may experience production inefficiencies, challenges related to material flow and workmanship, or other issues customary to ramping a new factory. If we are not able to fully ramp our facility, our revenues may be negatively impacted until we are able to increase capacity or productivity.

Our long-term success and results of operations depend on our ability to successfully integrate Artesyn's business and operations and realize the anticipated benefits from the acquisition.

In September 2019, we acquired Artesyn, and we are continuing to combine Artesyn's business with our business. The acquisition of Artesyn has significantly increased our embedded power product offerings, increased our exposure to the Industrial and Medical, Data Center Computing, and Telecom and Networking markets, and significantly increased the number of employees and facilities.

To realize the anticipated benefits of the acquisition, we must continue to combine our businesses in an efficient and effective manner and realize our synergy and cost-savings targets. Integrating Artesyn's business and operations with ours requires significant management attention, effort, and expenditures, and we may not be able to achieve the longer-term integration goals in an effective, complete, timely or cost-efficient manner.

Potential risks related to the successful integration of Artesyn's business include our ability to:

- maintain and improve Artesyn's financial and operating results while integrating and optimizing our combined sales, marketing, manufacturing, and corporate administrative organizations;
- optimize our combined worldwide manufacturing footprint while utilizing Artesyn's vertically integrated manufacturing model for a broader set of Company products;
- successfully eliminate fixed costs previously absorbed by other businesses prior to the transaction;
- recognize and capitalize on anticipated product sales and technology enhancement opportunities presented by our combined businesses;

- integrate our information technology systems to mitigate cyber-security risks and enable the management and operation of the combined business.

If we are unable to successfully or timely integrate the operations of Artesyn's business into our business over the long-term, we may be unable to realize the long-term revenue growth, synergies, cost-savings, and other anticipated benefits resulting from the acquisition and our business could be adversely affected. Additionally, we have and may continue to incur transaction-related costs, including legal, regulatory, and other costs associated with implementing integration plans, including facilities and systems consolidation costs and employment-related costs. Artesyn's business and operations may not achieve the anticipated revenues and operating results. Any of the foregoing risks could materially harm our business, financial condition, and results of operations.

Our debt obligations and the restrictive covenants in the agreements governing our debt could limit our ability to operate our business or pursue our business strategies, could adversely affect our business, financial condition, results of operations, and cash flows, and could significantly reduce stockholder benefits from a change of control event.

Our debt obligations could make us more vulnerable to general adverse economic and industry conditions and could limit our flexibility in planning for, or reacting to, changes in our business and the industries in which we operate, thereby placing us at a disadvantage to our competitors that have less indebtedness.

Our debt obligations impose financial covenants on us and our subsidiaries that require us to maintain a certain leverage ratio. The financial covenants place certain restrictions on our business that may affect our ability to execute our business strategy successfully or take other actions that we believe would be in the best interests of our Company. These include limitations or restrictions, among other things, on our ability and the ability of our subsidiaries to:

- incur additional indebtedness;
- pay dividends or make distributions on our capital stock or certain other restricted payments or investments;
- make domestic and foreign investments and extend credit;
- engage in transactions with affiliates;
- transfer and sell assets;
- effect a consolidation or merger or sell, transfer, lease, or otherwise dispose of all or substantially all our assets; and
- create liens on our assets to secure debt.

Our debt obligations contain certain customary events of default. Any breach of the covenants or other event of default could cause a default on our debt obligations, which could restrict our ability to borrow under our revolving credit facility. If there were an event of default under certain provisions of our debt arrangements that was not cured or waived, the holders of the defaulted debt may be able to cause all amounts outstanding with respect to the debt instrument, plus any required settlement costs, to be due and payable immediately. Our assets and cash flow may not be sufficient to fully repay borrowings under our outstanding debt instruments if accelerated upon an event of default. If we are unable to repay, refinance, or restructure our indebtedness as required, or amend the covenants contained in these agreements, the lenders can exercise all rights and remedies available under our Credit Agreement or applicable laws or equity.

Our orders of raw materials, parts, components, and subassemblies are based on demand forecasts.

We place orders with many of our suppliers based on our customers' quarterly forecasts and our annual forecasts. These forecasts are based on our customers' and our expectations as to demand for our products. As the quarter and the year progress, such demand can change rapidly or we may realize that our customers' expectations were overly optimistic or pessimistic, especially when industry or general economic conditions change. Orders with our suppliers cannot always be amended in response. In addition, to assure availability of certain components or to obtain priority pricing, we have entered into contracts with some of our suppliers that require us to purchase a specified number of components and subassemblies each quarter, even if we are not able to use such components or subassemblies.

Moreover, we have obligations to some of our customers to hold a minimum amount of finished goods in inventory, to fulfill just in time orders, regardless of whether the customers expect to place such orders. We currently have firm purchase commitments and agreements with various suppliers to ensure the availability of components. If demand for our products does not continue at current levels, we might not be able to use all the components that we are required to purchase under these commitments and agreements, and our reserves for excess and obsolete inventory may increase, which could have a material adverse effect on our results of operations. If demand for our products exceeds our customers' and our forecasts, we may not be able to timely obtain enough raw materials, parts, components, or subassemblies, on favorable terms or at all, to fulfill the excess demand. In addition, given the proprietary nature of our products, many of these parts are sole sourced or not easily interchangeable. For example, entering 2021 there was a global shortage of certain electronics and semiconductor parts given the emerging higher global demand for tech goods and the impact of COVID-19 and other disruptions on the global supply chain. This has resulted in higher levels of inventory while we procure critical parts to complete full kits. If we are not able to obtain parts in a reasonable timeframe and at a reasonable cost our business may be adversely impacted.

Activities necessary to integrate acquisitions may result in costs more than current expectations or be less successful than anticipated.

We have completed acquisitions in the past, and we may acquire other businesses in the future. The success of such transactions will depend on, among other things, our ability to integrate assets and personnel acquired in these transactions and to apply our internal controls process to these acquired businesses. The integration of acquisitions may require significant attention from our management, and the diversion of management's attention and resources could have a material adverse effect on our ability to manage our business. Furthermore, we may not realize the degree or timing of benefits we anticipated when we first entered the acquisition transaction. If actual integration costs are higher than amounts originally anticipated, if we are unable to integrate the assets and personnel acquired in an acquisition as anticipated, or if we are unable to fully benefit from anticipated synergies, our business, financial condition, results of operations, and cash flows could be materially adversely affected.

We transitioned a significant amount of our supply base to Asian suppliers.

We transitioned the purchasing of a substantial portion of components for our products to Asian suppliers to lower our materials costs and shipping expenses. These components might require us to incur higher than anticipated testing or repair costs, which would have an adverse effect on our operating results. Customers who have strict and extensive qualification requirements might not accept our products if these lower-cost components do not meet their requirements. A delay or refusal by our customers to accept such products, as well as an inability of our suppliers to meet our purchasing requirements, might require us to purchase higher-priced components from our existing suppliers or might cause us to lose sales to these customers, either of which could lead to decreased revenue and gross margins and have an adverse effect on our results of operations.

We generally have no long-term contracts with our customers requiring them to purchase any specified quantities from us.

Our sales are primarily made on a purchase order basis, and we generally have no long-term purchase commitments from our customers, which is typical in the industries we serve. As a result, we are limited in our ability to predict the level of future sales or commitments from our current customers, which may diminish our ability to allocate labor, materials, and equipment in the manufacturing process effectively. In addition, we may purchase inventory in anticipation of sales that do not materialize, resulting in excess and obsolete inventory write-offs.

If we are unable to adjust our business strategy successfully for some of our product lines to reflect the increasing price sensitivity on the part of our customers, our business and financial condition could be harmed.

Our business strategy for many of our product lines has been focused on product performance and technology innovation to provide enhanced efficiencies and productivity. Our customers continually exert pressure on us to reduce our prices and extend payment terms and we may be required to enter into long term reduced pricing agreements with our largest customers to remain competitive. In addition, we compete in markets in which customers may include dual or multi-sourcing of power. We believe some of our Asian competitors benefit from local governmental funding incentives and purchasing preferences from end-user customers in their respective countries. If competition against any of our product lines should come to focus solely on price rather than on product performance and technology innovation, we will need to adjust our business strategy, product offerings and product costs accordingly, and if we are unable to do so, our business, financial condition, and results of operations could be materially and adversely affected.

A significant portion of our sales and accounts receivable are concentrated among a few customers.

The following table summarizes the percentage of total sales derived from our ten largest customers:

	Nine Months Ended September 30,	Years Ended December 31,	
	2021	2020	2019
Ten largest customers	58.0 %	58.0 %	57.3 %

The following table summarizes sales to and percentage of total sales from Applied Materials, Inc. and Lam Research Corp., our two largest customers (in thousands):

	Nine Months Ended September 30,		Years Ended December 31,			
	2021		2020		2019	
Applied Materials, Inc.	$ 218,757	20.7 %	$ 248,350	17.5 %	$ 164,724	20.9 %
Lam Research	109,734	10.4 %	$ 141,778	10.0 %	$ 88,251	11.2 %

The following table summarizes the accounts receivable balances, and percentages of the total accounts receivable, for customers that individually accounted for 10% or more of accounts receivable (in thousands):

	September 30, 2021		December 31, 2020	
Applied Materials, Inc.	$ 41,159	18.7 %	$ 33,402	14.2 %
Nidec Motor Corporation	*	* %	$ 24,344	10.4 %

* Customer's balance was less than 10% of total.

A significant decline in sales from large customers, or the Company's inability to collect on these sales, could materially and adversely impact our business, results of operations and financial condition.

The loss of any of our key personnel could significantly harm our results of operations and competitive position.

Our success depends to a significant degree upon the continuing contributions of our key management, technical, marketing, and sales employees. We may not be successful in retaining our key employees or attracting or retaining additional skilled personnel as required. Failure to retain or attract key personnel could significantly harm our results of operations and competitive position. Our success in hiring and retaining employees depends on a variety of factors, including the attractiveness of our compensation and benefit programs, global economic or political and industry conditions, our organizational structure, our reputation, culture and working environment, competition for talent and the availability of qualified employees, the availability of career development opportunities, and our ability to offer a challenging and rewarding work environment. We must develop our personnel to provide succession plans capable of maintaining continuity during the inevitable unpredictability of personnel retention. While we have plans for key management succession and long-term compensation plans designed to retain our senior employees, if our succession plans do not operate effectively, our business could be adversely affected.

The market price of our common stock has fluctuated and may continue to fluctuate for reasons over which we have no control.

The stock market has from time to time experienced, and is likely to continue to experience, extreme price and volume fluctuations. Prices of securities of technology companies have been especially volatile and have often fluctuated for reasons that are unrelated to their operating performance. In the past, companies that have experienced volatility in the market price of their stock have been the subject of securities class action litigation. If we were the subject of securities class action litigation, it could result in substantial costs and a diversion of management's attention and resources.

Our operating results are subject to fluctuations, and if we fail to meet the expectations of securities analysts or investors, our share price may decrease significantly.

Our annual and quarterly results may vary significantly depending on various factors, many of which are beyond our control. Because our operating expenses are based on anticipated revenue levels, our sales cycle for development work is relatively long, and a high percentage of our expenses are fixed for the short term, a small variation in the timing of recognition of revenue can cause significant variations in operating results from period to period. If our earnings do not meet the expectations of securities analysts or investors, the price of our stock could decline.

Commercial and financial related risks

We are highly dependent on our intellectual property.

Our success depends significantly on our proprietary technology. We attempt to protect our intellectual property rights through patents and non-disclosure agreements; however, we might not be able to protect our technology, and customers or competitors might be able to develop similar technology independently. In addition, the laws of some foreign countries might not afford our intellectual property the same protections as do the laws of the United States. Our intellectual property is not protected by patents in several countries in which we do business, and we have limited patent protection in other countries, including the PRC. Generally, our efforts to obtain international patents have been concentrated in the European Union and certain industrialized countries in Asia, including Korea, Japan, and Taiwan. If we are unable to protect our intellectual property successfully, our business, financial condition, and results of operations could be materially and adversely affected.

The PRC commercial law is relatively undeveloped compared to the commercial law in the United States. Limited protection of intellectual property is available under PRC law. Consequently, manufacturing our products in the PRC may subject us to an increased risk that unauthorized parties may attempt to copy our products or otherwise obtain or use our intellectual property.

We are subject to risks inherent in international operations.

Given the global nature of our business, we have both domestic and international concentrations of cash and investments. The value of our cash, cash equivalents, and marketable securities can be negatively affected by liquidity, credit deterioration, financial results, economic risk, political risk, sovereign risk, or other factors.

Sales to our customers outside the United States were approximately 68.7% and 59.2% of our total sales for the year ended December 31, 2020 and 2019, respectively. Our acquisitions have increased our presence in international locations. Our success producing goods internationally and competing in international markets is subject to our ability to manage various risks and difficulties, including, but not limited to:

- our ability to effectively manage our employees at remote locations who are operating in different business environments from the United States;
- our ability to develop and maintain relationships with suppliers and other local businesses;
- compliance with product safety requirements and standards that are different from those of the United States;
- variations and changes in laws applicable to our operations in different jurisdictions, including enforceability of intellectual property and contract rights;
- trade restrictions, political instability, disruptions in financial markets, and deterioration of economic conditions;
- customs regulations and the import and export of goods (including customs audits in various countries that occur from time to time);
- the ability to provide enough levels of technical support in different locations;

- our ability to obtain business licenses that may be needed in international locations to support expanded operations;
- timely collecting accounts receivable from foreign customers including significant balances in accounts receivable from foreign customers; and
- changes in tariffs, taxes, and foreign currency exchange rates.

Our profitability and ability to implement our business strategies, maintain market share and compete successfully in international markets will be compromised if we are unable to manage these and other international risks successfully.

We are exposed to risks associated with worldwide financial markets and the global economy.

Our business depends on the expansion of manufacturing capacity in our end markets and the installation base for the products we sell. In the past, severe tightening of credit markets, turmoil in the financial markets, and a weakening global economy have contributed to slowdowns in the industries in which we operate and has negatively impacted the global demand for our products. Some of our key markets depend largely on consumer spending. Economic uncertainty exacerbates negative trends in consumer spending and may cause our customers to push out, cancel, or refrain from placing orders.

Difficulties or increased costs in obtaining capital and uncertain market conditions may also lead to a reduction of our sales and greater instances of nonpayment. These conditions may similarly affect our key suppliers, which could affect their ability to deliver parts and result in delays for our products. Further, these conditions and uncertainty about future economic conditions including inflation, interest rates, availability of capital markets, consumer spending rates, energy availability and costs and the effects of government initiatives to manage economic conditions could make it challenging for us to forecast our operating results and evaluate the risks that may affect our business, financial condition, and results of operations.

Globalization of sales increases risk of compliance with policy.

We operate in an increasingly complex sales environment around the world which places greater importance on our global control environment and imposes additional oversight risk. Such increased complexity could adversely affect our operating results by increasing compliance costs in the near-term and by increasing the impact of control failures in the event of non-compliance.

Our legacy inverter products may suffer higher than anticipated litigation, damage, or warranty claims.

Our legacy inverter products (of which we discontinued the manufacture, engineering, and sale in December 2015 and which are reflected as Discontinued Operations in this filing) contain components that may contain errors or defects and were sold with original product warranties ranging from one to ten years with an option to purchase additional warranty coverage for up to 20 years. If any of our products are defective or fail because of their design, we might be required to repair, redesign, or recall those products or to pay damages (including liquidated damages) or warranty claims, and we could suffer significant harm to our reputation. We are experiencing increasing claims from customers and suppliers and increasing litigation related to the legacy inverter product line. We review such claims and vigorously defend against such lawsuits in the ordinary course of our business. We cannot assure that any such claims or litigation brought against us will not have a material adverse effect on our business or financial statements. Our involvement in such litigation could result in significant expense to us and divert the efforts of our technical and management personnel. We also accrue a warranty reserve for estimated costs to provide warranty services including the cost of technical support, product repairs, and product replacement for units that cannot be repaired. Our estimate of costs to fulfill our warranty obligations is based on historical experience and expectation of future conditions. To the extent we experience increased warranty claim activity or increased costs associated with servicing those claims, our warranty accrual will increase, resulting in additional expenses in the line "Income (loss) from discontinued operations, net of income taxes" on our Consolidated Statement of Operations in future periods. We plan to continue supporting inverter customers with service maintenance and repair operations. This includes performing service to fulfill obligations under existing service maintenance contracts. There is no certainty that these can be performed profitably and could be adversely affected by higher than anticipated product failure rates, loss of critical service technician skills, an inability to obtain service parts, customer demands and disputes and cost of repair parts, among other factors. See *Note 4. Disposed and Discontinued Operations* in Part II, Item 8 "Financial Statements and Supplementary Data" contained in our Annual Report on Form 10-K for the year ended December 31, 2020.

Our products may suffer from defects or errors leading to damage or warranty claims.

Our products use complex system designs and components that may contain errors or defects, particularly when we incorporate new technology into our products or release new versions. If any of our products are defective or fail because of their design, we might be required to repair, redesign, or recall those products, pay damages (including liquidated damages) or warranty claims, and we could suffer significant harm to our reputation. We accrue a warranty reserve for estimated costs to provide warranty services including the cost of technical support, product repairs, and product replacement for units that cannot be repaired. Our estimate of costs to fulfill our warranty obligations is based on historical experience and expectation of future conditions. To the extent we experience increased warranty claim activity or increased costs associated with servicing those claims, our warranty accrual will increase, resulting in decreased gross profit. In recent years, we have experienced increased warranty costs for our legacy inverter product lines, which is reflected in "Income (loss) from discontinued operations, net of income taxes." See *Note 4. Disposed and Discontinued Operations* in Part II, Item 8 "Financial Statements and Supplementary Data" contained in our Annual Report on Form 10-K for the year ended December 31, 2020.

Unfavorable currency exchange rate fluctuations may lead to lower operating margins, or may cause us to raise prices, which could result in reduced sales.

Currency exchange rate fluctuations could have an adverse effect on our sales and results of operations, and we could experience losses with respect to forward exchange contracts into which we may enter. Unfavorable currency fluctuations could require us to increase prices to foreign customers, which could result in lower net sales by us to such customers. Alternatively, if we do not adjust the prices for our products in response to unfavorable currency fluctuations, our results of operations could be materially and adversely affected. In addition, we have large, long term liabilities such as local lease and pension liabilities in Europe and Asia creating more significant exposure to fluctuations in the value of the Euro, Philippine Peso, and Chinese Yuan. The Company does not attempt to hedge these exposures given the long-term nature of the underlying liabilities and the non-cash nature of the foreign exchange gain or loss.

The PRC government is continually pressured by its trading partners to allow its currency to float in a manner like other major currencies. Any change in the value of the Chinese yuan could significantly increase the labor and other costs incurred in the operation of our Shenzhen and Zhongshan facilities and the cost of raw materials, parts, components, and subassemblies that we source in the PRC, which could materially and adversely affect our results of operations.

The United Kingdom's exit from the European Union and related actions could adversely affect us.

On June 23, 2016, the United Kingdom ("UK") held a referendum in which voters approved an exit from the European Union ("EU"). On January 23, 2020, the UK left the EU, which is commonly referred to as "Brexit," and was in a transitionary period through December 31, 2020. As of January 1, 2021, EU Trade Agreements no longer apply to the UK. The UK has taken steps to reproduce the effects of trading agreements that previously applied through the provisional application of new trade agreements not yet ratified and has introduced the UK Global Tariff. These changes result in increased regulatory complexities on imports and exports between the UK and EU countries and may adversely affect our sales, operations, and financial results. Our operations in the UK may be adversely affected by significant fluctuations in the UK exchange rates and increased administrative costs and tariffs on the importation of parts for manufacturing and repair services. Moreover, the imposition of any import restrictions and duties levied on our UK products as imported for EU customers may make our products more expensive for such customers and less competitive from a pricing perspective.

Difficulties with our enterprise resource planning ("ERP") system and other parts of our global information technology system could harm our business and results of operation.

Like many multinational corporations, we maintain a global information technology system, including software products licensed from third parties. The acquisition of Artesyn added additional information systems that are initially different from current systems. Any system, network or Internet failures, misuse by system users, the hacking into or disruption caused by unauthorized access or loss of license rights could disrupt our ability to timely and accurately manufacture and ship products or to report our financial information in compliance with the timelines mandated by the SEC. Any such failure, misuse, hacking, disruptions, or loss would likely cause a diversion of management's attention from the underlying business and could harm our operations. In addition, a significant failure of our global information technology system could adversely affect our ability to complete an evaluation of our internal controls and attestation activities pursuant to Section 404 of the Sarbanes-Oxley Act of 2002.

If our network security measures are breached and unauthorized access is obtained to a customer's data or our data or our information technology systems, we may incur significant legal and financial exposure and liabilities.

As part of our day-to-day business, we store our data and certain data about our customers in our global information technology system. Unauthorized access to our data, including any regarding our customers, could expose us to a risk of loss of this information, loss of business, litigation, and possible liability. These security measures may be breached by intentional misconduct by computer hackers, because of third-party action, employee error, malfeasance or otherwise. Additionally, third parties may attempt to fraudulently induce employees or customers into disclosing sensitive information such as usernames, passwords, or other information in order to gain access to our customers' data or our data, including our intellectual property and other confidential business information, or our information technology systems. Because the techniques used to obtain unauthorized access, or to sabotage systems, change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. Any security breach could result in a loss of confidence by our customers, damage our reputation, disrupt our business, lead to legal liability, and negatively impact our future sales.

We have been, and in the future may again be, involved in litigation. Litigation is costly and could result in further restrictions on our ability to conduct business or make use of market relationships we have developed, or an inability to prevent others from using our technology.

Litigation may be necessary to enforce our commercial or property rights, to defend ourselves against claimed violations of such rights of others, or to protect our interests in regulatory, tax, customs, commercial, and other disputes, or similar matters. We have experienced increased litigation related to our legacy inverter product line. Litigation often requires a substantial amount of our management's time and attention, as well as financial and other resources, including:

- substantial costs in the form of legal fees, fines, and royalty payments;
- restrictions on our ability to sell certain products or in certain markets;
- an inability to prevent others from using technology we have developed; and
- a need to redesign products or seek alternative marketing strategies.

Any of these events could have a significant adverse effect on our business, financial condition, and results of operations.

Return on investments or interest rate declines on plan investments could result in additional unfunded pension obligations for our pension plan.

We currently have unfunded obligations to our pension plans. The extent of future contributions to the pension plan depends heavily on market factors such as the discount rate used to calculate our future obligations and the actual return on plan assets which enable future payments. We estimate future contributions to the plan using assumptions with respect to these and other items. Changes to those assumptions could have a significant effect on future contributions. Additionally, a material deterioration in the funded status of the plan could increase pension expenses and reduce our profitability. See *Note 17. Employee Retirement Plans and Postretirement Benefits* in Part II, Item 8 "Financial

Statements and Supplementary Data" contained in our Annual Report on Form 10-K for the year ended December 31, 2020.

Our intangible assets may become impaired.

The following table summarizes our goodwill and intangible assets (in thousands):

	September 30, 2021
Goodwill	$ 213,625
Intangible assets, net	165,032
Total	$ 378,657

We periodically review the estimated useful lives of our identifiable intangible assets, taking into consideration any events or circumstances that might result in either a diminished fair value, or for intangible assets, a revised useful life. The events and circumstances include significant changes in the business climate, legal factors, operating performance indicators, and competition. Any impairment or revised useful life could have a material and adverse effect on our financial position and results of operations and could harm the trading price of our common stock.

International trade, tax, and regulatory related risks

Significant developments stemming from recent U.S. government actions and proposals concerning tariffs and other economic proposals could have a material adverse effect on us.

U.S. government actions are imposing greater restrictions and economic disincentives on international trade. It has initiated the imposition of additional tariffs on certain foreign goods, including steel and aluminum, semiconductor manufacturing equipment and spare parts thereof and has also announced the imposition of import license requirements on aluminum articles. The government has amended and expanded export regulations regarding sales to companies on the U.S. Entity List. These changes prevent sales of foreign produced direct product of the U.S. that is manufactured using controlled U.S.-origin equipment, technology, and software located outside the United States to companies on the U.S. Entity List. Additionally, the U.S. Department of Defense continues to issue lists of companies it has determined to be owned or controlled by China’s People’s Liberation Army on which sanctions could be levied by executive order, and the Department of Commerce has published their "first tranche" of designated military end users from China and Russia for whom export licenses are now required.

Furthermore, the government has determined that the Special Administrative Region of Hong Kong is no longer sufficiently autonomous to justify being treated as separate from China and has eliminated certain license exceptions for the export of controlled goods to Hong Kong and has removed Hong Kong as a separate shipping destination under the Export Administration Regulations ("EAR").

In response to U.S. Government actions, China passed the Export Control Law of the People’s Republic of China, effective December 1, 2020. The Export Control Law provides the Chinese government with the framework to ban exports of strategic materials and advanced technologies to specific foreign entities on its Control List and also provides a counterweight to the U.S. government’s restrictions through provisions for retaliatory action and extraterritorial jurisdiction.

Changes in U.S. trade policy could result in one or more U.S. trading partners adopting responsive trade policy making it more difficult or costly for us to export our products to those countries. As indicated above, these measures could also result in increased costs for goods imported into the U.S. This in turn could require us to increase prices to our customers which may reduce demand, or, if we are unable to increase prices, result in lowering our margin on goods and services sold. To the extent that trade tariffs and other restrictions imposed by the U.S. increase the price of semiconductor equipment and related parts imported into the U.S., the cost of our materials may be adversely affected and the demand from customers for products and services may be diminished, which could adversely affect our revenues and profitability.

The adoption and expansion of trade restrictions, the occurrence of a trade war, or other governmental action related to tariffs or trade agreements or policies has the potential to adversely impact demand for our products, our costs, our customers, our suppliers, and the U.S. economy, which in turn could adversely impact our business, financial condition, and results of operations.

Changes in U.S. social, political, regulatory, and economic conditions or in laws and policies governing foreign trade, manufacturing, development and investment in the territories and countries where we currently develop and sell products, and any negative sentiments towards the United States as a result of such changes, could adversely affect our business. In addition, negative sentiments towards the United States among non-U.S. customers and among non-U.S. employees or prospective employees could adversely affect sales or hiring and retention, respectively.

Increased governmental action on income tax regulations could negatively impact our business.

International governments have heightened their review and scrutiny of multinational businesses like ours which could increase our compliance costs and future tax liability to those governments. As governments continue to look for ways to increase their revenue streams, they could increase audits of companies to accelerate the recovery of monies perceived as owed to them under current or past regulations. Such an increase in audit activity could have a negative impact on companies which operate internationally, as we do.

Changes in tax laws, tax rates, or mix of earnings in tax jurisdictions in which we do business, could impact our future tax liabilities and related corporate profitability.

We are subject to income taxes in the U.S. (federal and state) and numerous foreign jurisdictions. Tax laws, regulations, and administrative practices in various jurisdictions by their nature are complex and may be subject to significant change due to economic, political, and other conditions, and significant judgment is required in evaluating and estimating our provision and accruals for these taxes. There are many transactions that occur during the ordinary course of business for which the ultimate tax determination is uncertain. Our effective tax rates could be adversely affected by earnings being lower than anticipated in jurisdictions where we have lower statutory rates and earnings higher than anticipated in jurisdictions where we have higher statutory rates, losses incurred in jurisdictions for which we are not able to realize the related tax benefit, changes in foreign currency exchange rates, entry into new businesses and geographies and changes to our existing businesses, acquisitions (including integrations) and investments, changes in our deferred tax assets and liabilities and their valuation, and changes in the relevant tax, accounting, and other laws, regulations, administrative practices, principles, and interpretations, including fundamental changes to the tax laws applicable to corporate multinationals. The U.S., many countries in the European Union, and several other countries are actively considering changes in this regard.

Changes in our provision for income taxes or adverse outcomes resulting from examination of our income tax returns could adversely affect our results.

Our provision for income taxes is subject to volatility and could be adversely affected by earnings being lower than anticipated in countries that have lower tax rates and higher than anticipated in countries that have higher tax rates; by changes in the valuation of our deferred tax assets and liabilities; by changes, regulations, and interpretations of foreign-derived intangible income ("FDII"), global intangible low-tax income ("GILTI") and base erosion and anti-abuse tax laws ("BEAT"); by expiration of or lapses in tax incentives; by transfer pricing adjustments, including the effect of acquisitions on our legal structure; by tax effects of nondeductible compensation; by tax costs related to intercompany realignments; by changes in accounting principles; or by changes in tax laws and regulations, treaties, or interpretations thereof, including changes to the taxation of earnings of our foreign subsidiaries, the deductibility of expenses attributable to foreign income, and the foreign tax credit rules. Significant judgment is required to determine the recognition and measurement attribute prescribed in the accounting guidance for uncertainty in income taxes. The Organization for Economic Co-operation and Development ("OECD"), an international association comprised of 36 countries, including the United States, has made changes to numerous long-standing tax principles. There can be no assurance that these changes, once adopted by countries, will not have an adverse impact on our provision for income taxes. Further, because of certain of our ongoing employment and capital investment actions and commitments, our income in certain countries is subject to reduced tax rates. Our failure to meet these commitments could adversely impact our provision for income taxes. In addition, we are the subject of regular examination of our income tax returns by tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these continuous examinations will not have an adverse effect on our operating results and financial condition.

Our business is subject to complex and evolving U.S. and international laws and regulations regarding privacy and data protection. Many of these laws and regulations are subject to change and uncertain interpretation and could result in claims, changes to our business practices, penalties, increased cost of operations, or declines in user growth or engagement, or otherwise harm our business.

Regulatory authorities around the world have implemented or are considering several legislative and regulatory proposals concerning data protection, including measures to ensure that encryption of users' data does not hinder law enforcement agencies' access to that data. In addition, the interpretation and application of consumer and data protection laws in the U.S., Europe and elsewhere are often uncertain and in flux. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with our data practices. These legislative and regulatory proposals, if adopted, and such interpretations could, in addition to the possibility of fines, result in an order requiring that we change our data practices, which could have an adverse effect on our business and results of operations. Complying with these various laws could cause us to incur substantial costs or require us to change our business practices in a manner adverse to our business.

We are subject to numerous governmental regulations.

We are subject to federal, state, local and foreign regulations, including environmental regulations and regulations relating to the design and operation of our products and control systems and regulations governing the import, export and customs duties related to our products. We might incur significant costs as we seek to ensure that our products meet safety and emissions standards, many of which vary across the states and countries in which our products are used. In the past, we have invested significant resources to redesign our products to comply with these directives. In addition, with our acquisition of Versatile Power, Inc., we expanded our presence in the medical market to include more highly regulated applications and added its medical-certified manufacturing center to our operating footprint. We may encounter increased costs to maintain compliance with the quality systems and other regulations and requirements that apply to the acquired business. Compliance with future regulations, directives, and standards could require us to modify or redesign some products, make capital expenditures, or incur substantial costs. Also, we may incur significant costs in complying with the numerous imports, exports, and customs regulations as we seek to sell our products internationally. If we do not comply with current or future regulations, directives, and standards:

- we could be subject to fines and penalties;
- our production or shipments could be suspended; and
- we could be prohibited from offering particular products in specified markets.

If we were unable to comply with current or future regulations, directives and standards, our business, financial condition, and results of operations could be materially and adversely affected.

Financial reform legislation will result in new laws and regulations that may increase our costs of operations.

The Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") requires various federal agencies to adopt a broad range of implementing rules and regulations, and to prepare numerous studies and reports for Congress. On August 22, 2012, under the Dodd-Frank Act, the SEC adopted requirements for companies that use certain minerals and metals, known as conflict minerals, in their products, whether or not these products are manufactured by third parties. These requirements require companies to perform due diligence, disclose and report whether such minerals originate from the Democratic Republic of Congo and adjoining countries. We must perform sufficient due diligence to determine whether such minerals are used in the manufacture of our products. In addition, we incur costs to comply with the disclosure requirements, including costs related to determining the source of any of the relevant minerals and metals used in our products. Since our supply chain is complex, we may not be able to sufficiently verify the origins for these minerals and metals used in our products through the due diligence procedures that we implement, which may harm our reputation. In such event, we may also face difficulties in satisfying customers who require that all the components of our products are certified as conflict mineral free.

General Risk Factors

Our failure to maintain appropriate environmental, social, and governance ("ESG") practices and disclosures could result in reputational harm, a loss of customer and investor confidence, and adverse business and financial results.

Governments, investors, customers, and employees are enhancing their focus on ESG practices and disclosures, and expectations in this area are rapidly evolving and increasing. While we monitor the various and evolving standards and associated reporting requirements, failure to adequately maintain appropriate ESG practices that meet diverse stakeholder expectations may result in the loss of business, diluted market valuation, an inability to attract customers, and an inability to attract and retain top talent.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

To execute the repurchase of shares of our common stock, the Company periodically enters into stock repurchase agreements. The following table summarizes these repurchases:

	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Value of Shares that May Yet be Purchased Under the Plans or Programs
	(in thousands, except price per share data)			
January 1, 2021 - January 31, 2021	—	$ —	—	$ 38,369
February 1, 2021 - February 28, 2021	—	$ —	—	$ 38,369
March 1, 2021 - March 31, 2021	—	$ —	—	$ 38,369
First quarter		$		
April 1, 2021 - April 30, 2021	—	$ —	—	$ 38,369
May 1, 2021 - May 31, 2021	72	$ 90.34	72	$ 31,866
June 1, 2021 - June 30, 2021	—	$ —	—	$ 31,866
Second quarter	72	$ 90.34	72	
July 1, 2021 - July 31, 2021	8	$ 94.34	8	$ 199,218
August 1, 2021 - August 31, 2021	338	$ 86.45	338	$ 170,002
September 1, 2021 - September 30, 2021	259	$ 87.32	259	$ 147,444
Third quarter	605	$ 86.93	605	
Total	677	$ 87.30	677	$ 147,444

The following table summarizes actions by our Board of Directors in relation to the stock repurchase program:

Date	Action
September 2015	Authorized a program to repurchase up to $150.0 million of our common stock
May 2018	Approved a $50.0 million increase in the repurchase program
December 2019	Authorized the removal of the expiration date and increased the balance available for the repurchase program by $25.1 million
July 2021	Approved an increase to the repurchase program, which authorized the Company to repurchase up to $200.0 million with no time limitation

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None

ITEM 4. MINE SAFETY DISCLOSURES

None

ITEM 5. OTHER INFORMATION

On November 4, 2021, the Board of Directors of Advanced Energy Industries, Inc. (the “Company”) approved the Advanced Energy Industries, Inc. Deferred Compensation Plan (the “Plan”). The Plan is an unfunded arrangement intended to be exempt from the participation, vesting, funding and fiduciary requirements set forth in Title I of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”), and to comply with Section 409A of the Internal Revenue Code of 1986, as amended (the “Code”). The obligations of the Company under the Plan will be general unsecured obligations of the Company to pay deferred compensation in the future to eligible participants in accordance with the terms of the Plan from the general assets of the Company, although the Company may establish a trust to hold amounts which the Company may use to satisfy Plan distributions from time to time. The establishment of such a trust shall in no way deem the Plan to be “funded” for purposes of ERISA or the Code.

The Plan will be administered by the compensation committee of the Company’s Board of Directors (the “Committee”). The Plan will allow a select group of management employees, including the Company’s named executive officers, to defer receiving certain of their cash compensation. Participants in the Plan may defer up to (1) 80% of their annual base salaries, (2) up to 100% of any commission, and (3) up to 100% of any annual performance-based cash bonus, or any special bonus paid in cash.

The Company will also credit to each participant’s account under the Plan an amount equal to the employer matching contribution that would have been made for the participant under the Company’s 401(k) plan that could not be made under that plan due to limitations under Code Sections 401(a)(17) and 415(c). The Company also may make discretionary contributions to participants’ accounts in the Plan.

Earnings and losses on amounts deferred under the Plan will be determined on the basis of the participants’ deemed investments of their account balances into commercially available investment funds selected by the participants from among the funds made available from time to time by the Committee.

Generally, distributions under the Plan will be paid in a lump sum in cash six months after the participant’s separation from service unless the participant has elected to receive annual installments over a period of up to ten years or the participant has begun receiving distributions as a result of an election to receive distributions on a specified date prior to separation from service. A participant also may elect to receive distributions on the participant’s death or disability.

The foregoing description of the Plan is not complete and is qualified in its entirety by reference to the Advanced Energy Industries, Inc. Deferred Compensation Plan filed as Exhibit 10.4 to this Quarterly Report on Form 10-Q.

ITEM 6. EXHIBITS

The exhibits listed in the following index are filed as part of this Quarterly Report on Form 10-Q.

Exhibit Number	Description	Incorporated by Reference Form	File No.	Exhibit	Filing Date
3.1	Second Amended and Restated By-Laws of Advanced Energy Industries, Inc. (included to correct the hyperlink to the previously filed exhibit)	8-K	000-26966	3.1	May 20, 2020
10.1	Transition and Separation Agreement of Mr. Dana Huth, dated July 7, 2021				Filed herewith
10.2	Offer of Employment to Mr. Eduardo Bernal Acebedo dated August 2, 2021	8-K	000-26966	10.1	Sept. 8, 2021
10.3	Amendment No. 1 to Credit Agreement, dated September 9, 2021, by and among Advanced Energy Industries, Inc., the guarantors party thereto, Bank of America N.A. as the Administrative Agent, and the lenders party thereto (which includes the marked Credit Agreement as Exhibit A thereto).	8-K	000-26966	10.2	Sept. 9, 2021
10.4	Advanced Energy Industries, Inc. Deferred Compensation Plan				Filed herewith
31.1	Certification of the Chief Executive Officer Pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				Filed herewith
31.2	Certification of the Chief Financial Officer Pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				Filed herewith
32.1	Certification of the Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				Filed herewith
32.2	Certification of the Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				Filed herewith
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.				Filed herewith
101.SCH	XBRL Taxonomy Extension Schema Document.				Filed herewith
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.				Filed herewith
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.				Filed herewith
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.				Filed herewith
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.				Filed herewith
104	Cover Page Interactive Data File – formatted in Inline XBRL and contained in Exhibit 101				Filed herewith

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.

ADVANCED ENERGY INDUSTRIES, INC.

Dated: November 9, 2021

/s/ Paul Oldham
Paul Oldham
Chief Financial Officer and Executive Vice President

TRANSITION AND SEPARATION AGREEMENT

This Transition and Separation Agreement (the "Agreement") is entered into as of July 7, 2021 (the "Execution Date") by and between **Advanced Energy Industries, Inc.**, a Delaware Corporation, having an address at 1595 Wynkoop Street, Suite 800, Denver, Colorado 80202 ("AEI" or the "Company") and **Dana Huth** (the "Employee"). The term AEI shall also include all subsidiaries and affiliates of AEI. Employee and AEI are collectively the "Parties."

1. Employment Relationship. By this Agreement, Employee hereby provides notice of his resignation from the Company effective September 13, 2021 (the "Separation Date"). The Company shall accept his resignation (as described herein) and allow Employee to remain an active employee but be required to perform no substantive services through the Separation Date. The Employee acknowledges and agrees that he has resigned from the officer position and title of Executive Vice President & Chief Revenue Officer as of the Execution Date but continues as an employee through the Separation Date. Employee will make himself available through the Separation Date to answer questions and to assist in transition matters at the request of the Company. Employee agrees that he shall continue to comply with all Company policies, procedures and internal controls during the remaining employment period.

2. Consideration. In consideration of Employee's execution of and compliance with this Agreement and the Company's agreement to allow Employee to remain as an active employee through the Separation Date, Employee will continue to receive his current base salary and health benefits through and until the Separation Date. As additional consideration, and subject to full compliance with this Agreement, the Company will provide the Employee with severance benefits consisting of his current base pay, which will be paid in accordance with the Company's payroll practices and subject to applicable withholdings and required authorized deductions, for a period of six (6) months from the Separation Date and ending March 14, 2022. Additionally, as an active employee of the Company through the Separation Date, Employee shall be eligible for (1) the payment of the second half of the Artesyn Retention Bonus on September 12, 2021, in the amount of $165,000, subject to all applicable withholdings and required or authorized deductions, all as more fully outlined in the Bonus Retention Agreement dated May 13, 2019, and (2) the vesting of 908 RSUs that is scheduled to occur on September 11, 2021. All other unvested RSUs and PSUs granted under the Company's LTI Plan are forfeited and cancelled. In addition, Employee will not be eligible to receive any payments under the Company's 2021 STI Plan.

3. Restrictive Covenants

a. Non-Competition. For a period of six (6) months after the Separation Date (i.e., through March 14, 2022), Employee shall not engage in, directly or indirectly, in any capacity, or have any direct or indirect ownership interest in, a unit of any business anywhere which competes with or is otherwise engaged in, either directly or indirectly, any aspect of the business of AEI as presently conducted or as contemplated to be conducted (of which the Employee has actual knowledge) (the "Business"), anywhere in the world (the "Restricted Territory"); provided, that Employee shall not be prohibited from holding less than five percent (5%) of the publicly-traded equity securities of any

Person (as defined below). It is recognized that AEI conducts the Business throughout the Restricted Territory and that more narrow geographical limitations of any nature on this non-competition covenant are therefore not appropriate. "Person" means any person, firm, partnership, joint venture, association, corporation or other business organization, entity or enterprise whatsoever. For a period continuing until six (6) months after the Separation Date, Employee agrees to notify the Company in writing of the name and position of his next employer.

b. Non-Solicit and Other Restrictions. The Employee agrees that the provisions set forth in the Confidentiality, Non-Solicitation and Assignment of Inventions Agreement, dated May 13, 2019, by and between Artesyn Embedded Technologies, Inc. and Employee (the "2019 Agreement") remains in full force and effect and Employee agrees to fully comply with such terms.

c. Reasonable and Necessary Restrictions. Employee acknowledges and agrees that the restrictions contained in this Section 3 and in the 2019 Agreement are reasonable and necessary to protect the legitimate interests of AEI, and that this Section 3 and the 2019 Agreement shall continue and shall survive any earlier termination of the Agreement. Employee acknowledges that any violation of this Section 3 will result in irreparable injury to AEI and agrees that AEI shall be entitled to preliminary and permanent injunctive relief, without the necessity of proving actual damages, as well as an equitable accounting of all earnings, profits and other benefits arising from any violation of this Section 3, which rights shall be cumulative and in addition to any other rights or remedies to which AEI may be entitled, including, without limitation, the right (but not the obligation) of the Company to claw back payments previously made in Section 2 above.

d. Severability. In the event that any covenant contained in this Section 3 should ever be adjudicated to exceed the time, geographic, product or service, or other limitations permitted by applicable law in any jurisdiction, then any court is expressly empowered to reform such covenant, and such covenant shall be deemed reformed, in such jurisdiction to the maximum time, geographic, product or service, or other limitations permitted by applicable law. The covenants contained in this Section and each provision thereof are severable and distinct covenants and provisions. The invalidity or unenforceability of any such covenant or provision as written shall not invalidate or render unenforceable the remaining covenants or provisions hereof, and any such invalidity or unenforceability in any jurisdiction shall not invalidate or render unenforceable such covenant or provision in any other jurisdiction.

4. Full and Final Release. In exchange for the consideration provided in this Agreement, Employee, for Employee personally and Employee's representatives, heirs, executors, administrators, successors and assigns, fully, finally and forever waives, releases and discharges AEI and its affiliates, as well as their respective successors, assigns, officers, owners, directors, agents, representatives, attorneys, and employees (all of whom are referred to throughout this Agreement as the "Released Parties"), of and from all claims, demands, actions, causes of action, suits, damages, losses, and expenses, of any and every nature whatsoever, individually or as part of a group action, known or unknown, as a result of actions or omissions occurring through the date Employee signs this Agreement. Specifically included in

this waiver and release are, without limitation, claims under the Summary of Employment Terms dated February 6, 2004 as amended on January 1, 2014, claims under the Conditional Confirmation Letter dated May 13, 2019, claims of unlawful discrimination, harassment, or failure to accommodate, claims related to the terms and conditions of employment such as for compensation or benefits (including existing short and long term incentive compensation and equity plans and any severance arrangements); and/or for wrongful termination of employment, under Title VII of the Civil Rights Act of 1964, the Americans with Disabilities Act, the Age Discrimination in Employment Act (ADEA), the National Labor Relations Act (NLRA), any amendments to the foregoing, or any other federal, state or local statute, rule, ordinance, or regulation, as well as any claims in equity or under common law for tort, contract, or wrongful discharge.

Employee also agrees to execute and deliver a second release of claims similar to the foregoing on the Separation Date.

5. Return of Property. Employee acknowledges access to and receipt of confidential business and proprietary information regarding the Company and its affiliates while employed and in his capacity hereunder. Employee agrees not to make any such information known to any member of the public. Employee agrees to return to the Company within five (5) days of the Execution Date any and all confidential and proprietary information and all other Company property, such as office equipment, computers, cell phones, and security badges, as well as all copies or excerpts of any property, files or documents obtained as a result of employment with the Company, except those items that the Company specifically agrees in writing to permit Employee to retain. Should the Company allow the Employee to retain any equipment, Employee agrees to return all such equipment at the Separation Date or earlier if requested by the Company.

6. Confidentiality. The nature and terms of this Agreement are strictly confidential and they have not been and shall not be disclosed by Employee at any time to any person other than Employee’s lawyer or accountant, a governmental agency, or Employee’s immediate family without the prior written consent of an officer of the Company, except as necessary in any legal proceedings directly related to the provisions and terms of this Agreement, to prepare and file income tax forms, or as required by court order after reasonable notice to the Company.

7. Cooperation. Employee agrees to cooperate with the Released Parties regarding any pending or subsequently filed litigation, claims or other disputes involving the Released Parties that relate to matters within the knowledge or responsibility of Employee. Without limiting the foregoing, Employee agrees (i) to meet with a Released Party’s representatives, its counsel or other designees at mutually convenient times and places with respect to any items within the scope of this provision; (ii) to provide truthful testimony regarding same to any court, agency, or other adjudicatory body; and (iii) to provide the Company with notice of contact by any non-governmental adverse party or such adverse party’s representative, except as may be required by law. The Company will reimburse Employee for reasonable expenses in connection with the cooperation described in this paragraph.

8. Non-Admission. This Agreement shall not be construed as an admission by any Released Party of any liability or acts of wrongdoing or unlawful discrimination, nor shall it be considered to be evidence of such liability, wrongdoing, or unlawful discrimination.

9. Non-Disparagement. Employee agrees not to make any public or private statements to clients, customers, suppliers, employees of the Released Parties and other third parties or to other members of the public that are in any way libelous, slanderous, or disparaging or negative towards the Released Parties or their products and services.

10. Advice of Counsel, Consideration and Revocation Periods, Other Information. By executing this Agreement, Employee acknowledges that: (a) he has had at least twenty one (21) days to consider the terms of this Agreement and has considered its terms for that period of time or has knowingly and voluntarily waived his right to do so; (b) he has been advised by the Company to consult with an attorney regarding the terms of this Agreement; (c) he has consulted with, or has had sufficient opportunity to consult with, an attorney of his own choosing regarding the terms of this Agreement; (d) he has read this Agreement and fully understands its terms and their import; (e) except as provided by this Agreement, he has no contractual right or claim to the benefits described herein; (f) the consideration provided for herein is good and valuable; and (g) **HE IS ENTERING INTO THIS AGREEMENT VOLUNTARILY, OF HIS OWN FREE WILL, AND WITHOUT ANY COERCION, UNDUE INFLUENCE, THREAT, OR INTIMIDATION OF ANY KIND OR TYPE WHATSOEVER**. Employee may revoke this waiver of his claims under the Age Discrimination in Employment Act by notice to Company in writing to Rory O'Byrne at the address set forth below in the signature block, such that the Company receives such notice of revocation within seven (7) days of the date Employee executes it (the "Revocation Period"). Employee also acknowledges and agrees that if the Company has not received his notice of his revocation of this Agreement prior to the expiration of the Revocation Period, he will have forever waived his right to revoke his waiver under the Age Discrimination in Employment Act, and his waiver of claims under the Age Discrimination in Employment Act shall thereafter be enforceable and have full force and effect.

11. Applicable Law and General Provisions. This Agreement shall be interpreted under the law of the state of Colorado. Any action or proceeding by either Party to enforce this Agreement shall be brought only in any state or federal court located in the state of Colorado, county of Denver. The Parties hereby irrevocably submit to the exclusive jurisdiction of such courts and waive the defense of inconvenient forum to the maintenance of any such action or proceeding in such venue. This Agreement sets forth the entire agreement between the parties. Employee is not relying on any other agreements or oral representations not fully addressed in this Agreement. Any prior agreements between or directly involving Employee and the Company are superseded by this Agreement, except that any prior agreements mentioned above or otherwise related to inventions, business ideas, confidentiality of corporate information, and unfair competition remain intact. The provisions of this Agreement are severable, and if any part of this Agreement except the release of claims is found by a court of law to be unenforceable, the remainder of this Agreement will continue to be valid and effective. The headings in this Agreement are provided for reference only and shall not affect the substance of this Agreement.

12. No Interference with Rights. Nothing in this Agreement is intended to waive claims (i) for unemployment or workers' compensation benefits, (ii) for vested rights under ERISA-covered employee benefit plans as applicable on the date Employee signs this Agreement, (iii) that may arise after Employee signs this Agreement or the release on the Separation Date, (iv) for reimbursement of expenses under the Company's expense reimbursement policies, or (v) which cannot be released by private agreement. In addition, nothing in this Agreement including but not limited to the acknowledgments, release of claims, proprietary information, confidentiality, cooperation, and non-disparagement or non-compete provisions (x) limits or affects Employee's s right to challenge the validity of this Agreement under the ADEA or the OWBPA, (y) prevents Employee from communicating with, filing a charge or complaint with or from participating in an investigation or proceeding conducted by the Equal Employment Opportunity Commission, National Labor Relations Board, the Securities and Exchange Commission, or any other any federal, state or local agency charged with the enforcement of any laws, including providing documents or any other information, or (z) limits Employee from exercising rights under Section 7 of the NLRA to engage in protected, concerted activity with other employees, although by signing this Agreement Employee is waiving rights to individual relief (including backpay, frontpay, reinstatement or other legal or equitable relief) in any charge, complaint, or lawsuit or other proceeding brought by Employee or on Employee's behalf by any third party, except for any right Employee may have to receive a payment or award from a government agency (and not the Company) for information provided to the government agency or otherwise where prohibited.

In exchange for the promises contained in this Agreement, the Company promises to provide the benefits set forth in this Agreement.

Date: July 7, 2021	Rory O'Byrne, SVP Address: Advanced Energy Industries, Inc. 1595 Wynkoop Street, Suite 800, Denver, CO 80202 Email: rory.obyrne@aei.com	/s/ Rory O'Byrne

In exchange for the consideration, payments, and other promises contained in this Agreement, Employee is entering into this Agreement voluntarily, deliberately, and with all information needed to make an informed decision to enter into this Agreement and has been given the opportunity to ask any questions regarding this Agreement and given notice of and an opportunity to retain an attorney or is already represented by an attorney.

Date: July 7, 2021	Dana Huth	/s/ Dana Huth Email Address:

EXHIBIT 10.4

ADVANCED ENERGY INDUSTRIES, INC.

DEFERRED COMPENSATION PLAN

Effective December 1, 2021

TABLE OF CONTENTS

AE DEFERRED COMPENSATION PLAN

Advanced Energy Industries, Inc., a Delaware corporation (the "**Company**"), hereby establishes the AE Deferred Compensation Plan (the "**Plan**"), effective November 1, 2021, (the "**Effective Date**"),

ARTICLE I
PURPOSE AND DEFINITIONS

1.1 Purpose. The Company adopts the Plan for the purpose of providing a select group of management or highly compensated employees of the Company the opportunity to defer the receipt of Compensation otherwise payable to such employees in accordance with the terms of the Plan. The Plan is intended to, and shall be interpreted to, comply in all respects with Code Section 409A and those provisions of ERISA applicable to an unfunded plan maintained primarily to provide deferred compensation for a select group of management or highly compensated employees.

1.2 Definitions. The following capitalized terms, when used in this Plan, have the meanings set forth below:

Annual Bonus:	A Participant's Annual Bonus or other incentive compensation provided for under a performance-based bonus or incentive arrangement, excluding Commission. As of the Effective Date, the Short-Term Incentive (STI) Plan has been approved for inclusion in this Plan as an Annual Bonus. An Annual Bonus may be determined by the Committee to constitute "performance-based compensation" under Treas. Reg. §1.409A-1(e)) earned with respect to one calendar year, provided that the performance period for such bonus amount is at least twelve (12) months long.
Base Salary:	A Participant's annual base salary, excluding incentive and discretionary bonuses, commissions, reimbursements and other non-regular remuneration, received from the Company, prior to reduction for any salary deferrals under benefit plans sponsored by the Company, including but not limited to, plans established under Code Section 125 or Code Section 401(k).
Beneficiary:	The person, persons or entity designated as such pursuant to Section 8.1.
Board:	The Board of Directors of the Company.
Code:	The Internal Revenue Code of 1986, as amended, as interpreted by Treasury regulations and applicable authorities promulgated thereunder.
Commission:	"Sales commission compensation" as defined in Treas. Reg. §1.409A-2(a)(12).

Committee:	The person or persons appointed by the Board to administer the Plan in accordance with Article IX, provided, that if the Board does not appoint a Committee, the Board shall act as the Committee.
Company 401(k) Plan:	Advanced Energy Industries, Inc. 401(k) Profit Sharing Plan, as may be amended from time to time.
Compensation:	All amounts eligible for deferral for a particular Plan Year under Section 3.1.
Deferral Account:	The bookkeeping account or accounts established under this Plan pursuant to Article IV and maintained by the Company in the names of the respective Participants, to which all amounts deferred under the Plan and earnings on such amounts shall be credited, and from which all amounts distributed under the Plan shall be debited.
Disability or Disabled:	Consistent with the requirements of Code Section 409A, that the Participant is (a) unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than 12 months, or (b) by reason of any medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than 12 months, receiving income replacement benefits for a period of not less than three months under an accident and health plan covering employees of the Company. For purposes of this Plan, a Participant shall be deemed Disabled if determined to be totally disabled by the Social Security Administration. A Participant shall also be deemed Disabled if determined to be disabled in accordance with the applicable disability insurance program of the Company, provided that the definition of "disability" applied under such disability insurance program complies with the requirements of this definition.
Disability Claim:	A claim related to any distribution or rights to which a Participant or other claimant may be entitled in connection with the Participant's Disability, as described in Section 9.2(b)(3).
Eligible Executive:	Each individual who, according to the books and records of the Company meets all of the following criteria, as determined by the Committee: (i) is a member of a select group of highly compensated or management employees, (ii) holds an L1 or above leadership position with the Company; (iii) maintains full-time employment status, and (iv) is designated as eligible by the Board or Committee.
Employer:	(a) Except as otherwise provided in part (b) of this definition, the Company

and/or any of its subsidiaries (now in existence or hereafter formed or acquired) that have been selected by the Committee to participate in the Plan and have adopted the Plan as a participating Employer.

(b) For the purpose of determining whether a Participant has experienced a Separation from Service, the term "Employer" shall mean:

(i) the entity for which the Participant performs services and with respect to which the legally binding right to compensation deferred under this Plan arises; and

(ii) all other entities with which the entity described above would be aggregated and treated as a single employer under Code Section 414(b) (controlled group of corporations) and Code Section 414(c) (a group of trades or businesses, whether or not incorporated, under common control), as applicable. In order to identify the group of entities described in the preceding sentence, the Committee shall use an ownership threshold of at least 50% as a substitute for the 80% minimum ownership threshold that appears in, and otherwise must be used when applying, the applicable provisions of (A) Code Section 1563 for determining a controlled group of corporations under Code Section 414(b), and (B) Treas. Reg. §1.414(c)-2 for determining the trades or businesses that are under common control under Code Section 414(c).

ERISA: The Employee Retirement Income Security Act of 1974, as amended, including Department of Labor and Treasury regulations and applicable authorities promulgated thereunder.

Fund or Funds: One or more of the investments selected by the Committee pursuant to Section 5.2 of the Plan.

Fund Subaccounts: Subaccounts of a Participant's Deferral Account, each of which corresponds to a Fund.

Interest Rate: For each Fund, the rate of return derived from the net gain or loss on the assets of such Fund, as determined by the Committee.

Participant: Any Eligible Executive who becomes a Participant in this Plan in accordance with Article II.

Participant Election: The forms or procedures by which a Participant makes elections with respect to (a) voluntary deferrals of his/her Compensation, (b) the Funds, which shall act as the basis for crediting of interest on Deferral Account balances, and (c) the form and timing of distributions from Deferral Accounts. Participant Elections may take the form of an electronic communication followed by appropriate confirmation according to specifications established by the Committee.

Payment Date:	The date by which a total distribution of the distributable amount shall be made or the date by which installment payments of the distributable amount shall commence, which shall be the first day of the month following the month in which the event triggering the distribution occurs or, in the case of a Scheduled In-Service Distribution, the first day of the month following the date indicated by the Participant for the elected Scheduled In-Service Distribution. Notwithstanding the foregoing:

(a) the Payment Date shall not be before the earliest date or after the latest date on which benefits may be distributed under Code Section 409A without violation of the provisions thereof, as reasonably determined by the Committee;

(b) the Payment Date for a Scheduled In-Service Distribution may not be earlier than the date specified by the Committee pursuant to Section 6.5(a); and

(c) to the extent required under Code Section 409A, any amount that otherwise would be payable to a Participant who is a "specified employee" of the Company, as determined by the Company in accordance with Code Section 409A, during the six-month period following such Participant's Separation from Service, shall be suspended until the lapse of such six-month period (or, if earlier, the date of death of the Participant). The amount that otherwise would be payable to such Participant during such period of suspension shall be paid in a single payment within 30 days following the end of such six-month period (or, if such day is not a business day, on the next succeeding business day) or within 30 days following the death of the Participant during such six-month period, provided that the death of the Participant during such six-month period shall not cause the acceleration of any amount that otherwise would be payable on any date during such six-month period following the date of the Participant's death.

Payment Delay Period:	Has the meaning described in Section 6.2(b).
Plan Year	The calendar year.
Performance Year:	To the extent that the Annual Bonus constitutes "performance-based compensation" under Treas. Reg. §1.409A-1(e), the calendar year used to measure the amount of Annual Bonus or Special Bonus (if applicable) to which a Participant may become entitled under a performance-based bonus or incentive arrangement.
Separation from Service:	A Separation from Services provided by a Participant to his or her

Employer, whether voluntarily or involuntarily, other than by reason of death or Disability, as determined by the Committee in accordance with Treas. Reg. §1.409A-1(h). For a Participant who provides services to an Employer as an employee, a Separation from Service shall occur when such Participant has experienced a termination of employment with the Employer. A Participant shall be considered to have experienced a termination of employment when the facts and circumstances indicate that the Participant and his or her Employer reasonably anticipate that either (i) no further services will be performed for the Employer after a certain date, or (ii) that the level of bona fide services the Participant will perform for the Employer after such date (whether as an employee or as an independent contractor) will permanently decrease to no more than 20% of the average level of bona fide services performed by such Participant (whether as an employee or an independent contractor) over the immediately preceding 36-month period (or the full period of services to the Employer if the Participant has been providing services to the Employer less than 36 months).

If a Participant is on military leave, sick leave, or other bona fide leave of absence, the employment relationship between the Participant and the Employer shall be treated as continuing intact, provided that the period of such leave does not exceed six (6) months, or if longer, so long as the Participant retains a right to reemployment with the Employer under an applicable statute or by contract. If the period of a military leave, sick leave, or other bona fide leave of absence exceeds six (6) months and the Participant does not retain a right to reemployment under an applicable statute or by contract, the employment relationship shall be considered to be terminated for purposes of this Plan as of the first day immediately following the end of such 6-month period. In applying the provisions of this paragraph, a leave of absence shall be considered a bona fide leave of absence only if there is a reasonable expectation that the Participant will return to perform services for the Employer.

Scheduled In-Service Distribution: A scheduled in-service distribution date elected by the Participant for distribution of amounts from a specified Deferral Account, including earnings thereon, which distribution shall be made provided that the Participant has not experienced a Separation from Service, as provided under Section 6.5.

Share Award: The number of bookkeeping units of cash-settled incentive awards expressed in the form of common stock of the Company, if any, that the Company awards to an Eligible Executive, including without limitation cash-settled restricted stock units and performance stock units.

Special Bonus: A Participant's bonus or other incentive compensation provided for as a one-time cash bonus or award, including, without limitation, a retention bonus or management-by-objectives bonus, specifically approved for inclusion in this Plan by the Committee, but not including an Annual Bonus, Commission, signing bonus, recognition spot bonus, or Share Award.

Unforeseeable Emergency: A severe financial hardship to the Participant resulting from an illness or accident of the Participant, the Participant's spouse, or a dependent (as defined in Code Section 152, without regard to Code Sections 152(b)(1), (b)(2), and (d)(1)(B)) of the Participant, loss of the Participant's property due to casualty, or other similar extraordinary and unforeseeable circumstances arising as a result of events beyond the control of the Participant, but shall in all events correspond to the meaning of the term "unforeseeable emergency" under Treas. Reg. §1.409A-3(i)(3). No Unforeseeable Emergency shall be deemed to exist to the extent that the financial hardship is or may be relieved (a) through reimbursement or compensation by insurance or otherwise, (b) by borrowing from commercial sources on reasonable commercial terms to the extent that this borrowing would not itself cause a severe financial hardship, (c) by cessation of deferrals under the Plan, or (d) by liquidation of the Participant's other assets to the extent that this liquidation would not itself cause severe financial hardship. The Committee shall determine whether the circumstances of the Participant constitute an Unforeseeable Emergency.

ARTICLE II
PARTICIPATION

2.1 Enrollment Requirements. As a condition to participation, each Eligible Executive shall complete, execute and return to the Committee the appropriate Participant Elections, as well as such other documentation and information as the Committee reasonably requests, by the deadline(s) established by the Committee. In addition, the Committee shall establish from time to time such other enrollment requirements as it determines, in its sole discretion, are necessary. If an Eligible Executive fails to meet all requirements established by the Committee within the period required, that Eligible Executive shall not be eligible to participate in the Plan during such Plan Year.

2.2 Commencement of Participation. Each Eligible Executive shall commence participation in the Plan on the date that the Committee determines that the Eligible Executive has met all enrollment requirements set forth in this Plan and required by the Committee, including returning all required documents to the Committee within the specified time period.

ARTICLE III
DEFERRAL ELECTIONS

3.1 Elections to Defer Compensation. An Eligible Executive shall be entitled to defer Compensation, including Base Salary, Commission, Annual Bonus, Special Bonus, and/or Share Awards (if so permitted by the Committee), in accordance with and subject to the conditions of this ARTICLE III, by filing with the Committee Participant Election(s) in such form and manner and at such time permitted under this ARTICLE III as the Committee shall prescribe. The Participant Election(s) and accompanying explanatory materials prescribed by the Committee for describing the time within which such elections may be made shall be treated as part of the Plan.

3.2 Deferral Amount. Elections to defer Compensation shall take the form of a whole percentage (less applicable payroll withholding requirements for Social Security and income taxes and employee benefit plans, as determined in the sole and absolute discretion of the Committee) of up to a maximum of 80% of Base Salary, 100% of any Commission, 100% of any Annual Bonus, and 100% of any Special Bonus (if applicable). Share Awards may be deferred as determined by the Committee in its sole discretion.

3.3 Time and Duration of Election. The time for making any deferral election shall be as follows:

(a) Election to Defer Base Salary, Commission and Special Bonus. A Participant who is an Eligible Executive as of the first day of any Plan Year beginning on or after the Effective Date may elect to defer his or her Base Salary and/or Special Bonus (if applicable) for such Plan Year, by election no later than December 1 of the immediately preceding Plan Year (or such later date as the Committee may authorize in its discretion, but not later than December 31 of such immediately preceding Plan Year), based on procedures established by the Committee. A Participant who is an Eligible Executive as of the first day of any Plan Year beginning on or after the Effective Date may elect to defer his or her Commission attributable to services provided in such Plan Year (as determined under Treas. Reg. §1.409A-2(a)(12)(i)) by election no later than December 1 of the immediately preceding Plan Year (or such later date as the Committee may authorize in its discretion, but not later than December 31 of such immediately preceding Plan Year), based on procedures established by the Committee.

(b) Election to Defer Annual Bonus. A Participant who is an Eligible Executive as of the first day of any Plan Year beginning on or after the Effective Date may elect to defer his or her Annual Bonus for such Plan Year, by election no later than December 1 of the immediately preceding Plan Year (or such later date as the Committee may authorize in its discretion, but not later than December 31 of such immediately preceding Plan Year), based on procedures established by the Committee. Notwithstanding the foregoing, to the extent that the Annual Bonus constitutes "performance-based compensation" under Treas. Reg. §1.409A-1(e), the Committee may (but shall not be obligated to) establish a different deferral election deadline, which in no event shall be later than the earlier of: (1) such time that the amount of the Annual Bonus is "readily ascertainable" pursuant to Treas. Reg. §1.409A-2(a)(8), or (2) June 30 of the Performance Year for such Annual Bonus; provided that the Participant has been performing services continuously from the later of the beginning of such Performance Year or the date the performance criteria for such Annual Bonus are established through the date the deferral election is made.

(c) New Participant Deferral Elections. An Eligible Executive who first becomes eligible to participate in the Plan as of the Effective Date or after the beginning of any Plan Year, as determined in accordance with Treas. Reg. §1.409A-2(a)(7) and the "plan aggregation" rules provided in Treas. Reg. §1.409A-1(c)(2), may be permitted to make an election to defer:

1) the portion of Base Salary and Commission attributable to services to be performed after such election (in the instance of Commission, determinable pursuant to Treas. Reg. §1.409A-2(a)(12)(i)); and/or

2) the portion of Annual Bonus and/or Special Bonus equal to the total of such Annual Bonus or Special Bonus multiplied by the ratio of the number of days remaining in the performance period after the election over the total number of days in the performance period applicable to the Participant;

in either case, provided that the Participant submits Participant Election(s) on or before the deadline established by the Committee, which in no event shall be later than 30 days after the Participant first becomes eligible to participate in the Plan and, with respect to Participant Election(s) to defer Annual Bonus or Special Bonus that constitute "performance-based compensation" under Treas. Reg. §1.409A-1(e)), if so determined by the Committee, in no event shall be later than such time that the amount of such Annual Bonus or Special Bonus is readily ascertainable. Notwithstanding the foregoing, an Eligible Executive who first becomes eligible to participate in the Plan as of the Effective Date through December 15, 2021 shall only be permitted to make an initial election pursuant to Section 3.3(a) and (b) with respect to amounts earned in (or attributable to services performed in) the 2022 Plan Year.

(d) Deferral of Share Awards. Participants may defer Share Awards as set forth in the applicable Participant Election provided by the Company to Participant at the time of grant of any such Share Awards, if such deferral is permitted by the Committee in its sole discretion.

(e) Irrevocability. A Participant's deferral election under this ARTICLE III shall be irrevocable after the last date prescribed under Section 3.3 for the making of such election; provided, however, that the Committee in its discretion may cancel a deferral election, in accordance with Code Section 409A, in the event of (1) a Participant becoming "disabled" under the meaning in Treas. Reg. §1.409A-3(j)(4)(xii), (2) an Unforeseeable Emergency, or (3) a hardship distribution pursuant to Treas. Reg. §1.401(k)-1(d)(3).

(f) Duration of Compensation Deferral Election. A deferral election made for any Plan Year shall be applicable only for that Plan Year.

ARTICLE IV
COMPANY CONTRIBUTIONS

4.1 Offset Contributions. The Company will credit to each Participant's Deferral Account the amount equal to the employer matching contribution that would have been made for the Participant to the Company 401(k) Plan but that could not be made because of the application of Code Sections 401(a)(17) and 415(c). Any such credit shall be made to a Participant's Deferral Account not later than the latest due date on which any contributions could be made to the Company 401(k) Plan for such Plan Year.

4.2 Discretionary Contributions. The Company may credit to each Participant's Deferral Account the amount, if any, that the Committee determines in its sole discretion to contribute for any Plan Year, which may include, without limitation, a credit with respect to the amount of employer matching contribution that each Participant was unable to be credited under the Company 401(k) Plan as a result of voluntary deferrals to this Plan being excluded from the applicable definition of compensation used under the Company 401(k) Plan to figure participant deferrals under such Company 401(k) Plan. Any discretionary credits under this paragraph shall be determined by the Committee in its sole discretion. If a Participant Separates from Service during a Plan Year, the Company may adjust the contribution or the Deferral Account balance as of the date of termination so that the discretionary credit for the Plan Year of termination reflects only the portion of the Plan Year during which the Participant was employed by the Company. No Participant will have any right to receive a contribution in any Plan Year, irrespective of any contributions made on behalf of the Participant or any other Participant in any past or succeeding years.

ARTICLE V
DEFERRAL ACCOUNTS

5.1 Deferral Accounts. The Committee shall establish and maintain such Deferral Accounts as are necessary for each Participant under the Plan. Each Participant's Deferral Account shall be further divided into Fund Subaccounts, each of which corresponds to a Fund designated pursuant to Section 5.3. A Participant's Deferral Account shall be credited as follows:

(a) As soon as reasonably possible after amounts are withheld and deferred from a Participant's Compensation, the Committee shall credit the Fund Subaccounts of the Participant's Deferral Account an amount equal to Compensation deferred by the Participant in accordance with the designation under Section 5.3; the Committee shall also credit to the Fund Subaccounts of the Participant's Deferral Account the Company contributions described in Sections 4.1 and 4.2 above;

(b) Each business day, each Fund Subaccount of a Participant's Deferral Account shall be credited with earnings or losses in an amount equal to that determined by multiplying the balance credited to such Fund Subaccount as of the prior day, less any distributions valued as of the end of the prior day, by the Interest Rate for the corresponding Fund as determined by the Committee pursuant to Section 5.3; and

(c) In the event that a Participant elects a Scheduled In-Service Distribution for a given Plan Year's deferral of Compensation, all amounts attributed to the deferral of Compensation for such Plan Year shall be accounted for in a manner which allows separate accounting for the deferral of Compensation and investment gains and losses associated with amounts allocated to each such separate Scheduled In-Service Distribution.

5.2 Committee Selection of Investment Funds. The Committee shall select from time to time, in its sole and absolute discretion, commercially available investment funds, which may either be free-standing or components of variable life insurance policies, to serve as Funds in which a Participant may deem his or her Deferral Accounts invested pursuant to Section 5.3. The Interest Rate of each such commercially available investment shall be used to determine the amount of earnings or losses to be credited to the Participant's Deferral Account under Section 5.1. The Participant's choice among investments shall be solely for purposes of calculation of the Interest Rate on Accounts. The Company shall have no obligation to set aside or invest amounts as directed by the Participant and, if the Company elects to invest amounts as directed by the Participant, the

Participant shall have no more right to such investments than any other unsecured general creditor.

5.3 Participant Fund Election. At the time of entering the Plan and/or of making a deferral election under the Plan, or at such other time as provided by the Committee, the Participant shall designate, according to such procedure as may be promulgated by the Committee, the Funds in which the Participant's Deferral Accounts shall be deemed to be invested for purposes of determining the amount of earnings and losses to be credited to each Deferral Account. The Participant may specify that all or any percentage of his or her Deferral Accounts shall be deemed to be invested, in whole percentage increments, in one or more of the Funds selected as alternative investments under the Plan from time to time by the Committee pursuant to Section 5.2. If a Participant fails to make an election among the Funds as described in this Section, the Participant's Account balance shall automatically be allocated into the default Fund selected by the Committee. A Participant may change any designation made under this Section as permitted by the Committee by filing a revised election, on a Participant Election provided by the Committee. Notwithstanding the foregoing, the Committee, in its sole discretion, may impose limitations on the frequency with which one or more of the Funds elected in accordance with this Section may be added or deleted by such Participant; furthermore, the Committee, in its sole discretion, may impose limitations on the frequency with which the Participant may change the portion of his or her Deferral Account balance allocated to each previously or newly elected Fund.

5.4 Trust. The Company shall be responsible for the payment of all benefits under the Plan. At its discretion, the Company may (but shall not be obligated to) establish one or more grantor trusts for the purpose of providing for payment of benefits under the Plan. Such trust or trusts may be irrevocable, but the assets thereof shall be subject to the claims of the Company's creditors. Benefits paid to the Participant from any such trust or trusts shall be considered paid by the Company for purposes of meeting the obligations of the Company under the Plan.

5.5 Statement of Accounts. The Committee shall provide each Participant with electronic statements at least quarterly setting forth the Participant's Deferral Account balance as of the end of each applicable period.

5.6 Vesting of Deferral Accounts. The Participant shall be vested at all times in all amounts credited to the Participant's Deferral Account(s).

ARTICLE VI
DISTRIBUTIONS

6.1 Distribution Elections.

(a) Initial Election. At the time of making a deferral election under the Plan, the Participant shall designate the time and form of distribution of deferrals made pursuant to such election (together with any earnings credited thereon) from among the alternatives specified under this ARTICLE VI for the applicable distribution. Notwithstanding the foregoing, all amounts credited to each Participant's Deferral Account by the Company pursuant to Article IV will not be subject to any elections and will be distributed in accordance with Section 6.6.

(b) Modification of Election. A distribution election with respect to previously deferred amounts may only be changed pursuant to the terms and conditions specified in Code

Section 409A and this Section. Except as permitted under Code Section 409A, no acceleration of a distribution is permitted. A subsequent election shall be permitted only if all of the following requirements are met:

(1) the new election does not take effect until at least twelve (12) months after the date on which the new election is made;

(2) the new election delays payment for at least five (5) years from the date that payment would otherwise have been made, absent the new election; and

(3) the new election is made not less than twelve (12) months before the date on which payment would have been made (or, in the case of installment payments, the first installment payment would have been made) absent the new election.

Participants may make a subsequent election only while employed by the Company, and may only make a single subsequent election with respect to any deferral election. A Beneficiary of a deceased Participant is not permitted to make a subsequent election under this Section. Election changes made pursuant to this Section shall be made in accordance with rules established by the Committee and shall comply with all requirements of Code Section 409A and applicable authorities.

6.2 Distributions of Employee Deferrals Upon Separation from Service.

(a) Timing and Form of Distributions of Employee Deferrals Upon Separation from Service. Except as otherwise provided herein (including if a Participant fails to make a timely distribution election in accordance with Section 6.1) in the event of a Participant's Separation from Service, the distributable amount credited to the Participant's Deferral Accounts attributable to deferral elections pursuant to Article III shall be paid in one lump sum payment on the first Payment Date following the expiration of six (6) months from Participant's Separation from Service, unless: (i) the Participant has made a distribution election on a timely basis to receive decrementing counter annual installments over a period of up to ten (10) years following Separation from Service, (ii) distributions to the Participant have commenced as of the Participant's Separation from Service pursuant to a Scheduled In-Service Distribution Election, in which case those Scheduled In-Service Distributions shall continue in effect, or (iii) all distributable amounts have already been paid out to Participant pursuant to a lump sum payment election upon Death or Disability.

(b) Payment Delay Period. A Participant may elect for payment of the lump sum payment or first annual installment (as applicable) payable pursuant to the first sentence of Section 6.2(a) to be made on the first Payment Date following the expiration of a period beginning on the date of Participant's Separation from Service and ending on a date chosen by Participant that is between six (6) months and three (3) years from such Separation from Service (the "**Payment Delay Period**"). In the case of annual installment distributions, subsequent installments shall be made in each successive year by the first of the month in which the first annual installment was made.

6.3 Distributions of Employee Deferrals Upon Disability.

(a) Prior to Commencement of Benefits. In the event of a Participant's Disability prior to commencement of a benefit described in this ARTICLE VI, if timely elected by the Participant in accordance with Section 6.1, the Participant may receive the distributable amount credited to the Participant's Deferral Accounts attributable to deferral elections pursuant to Article III in a lump sum payment on the Payment Date following the Participant's Disability, regardless of the form of payment otherwise designated by the Participant pursuant to Section 6.2(a) or Section 6.5(a).

(b) After Commencement of Benefits. In the event of a Participant's Disability after commencement of a benefit described in this ARTICLE VI, if timely elected by the Participant in accordance with Section 6.1, the Participant may receive the remaining distributable amount credited to the Participant's Deferral Accounts attributable to deferral elections pursuant to Article III in a lump sum payment of cash on the Payment Date following the Participant's Disability, regardless of the form of payment otherwise designated by the Participant pursuant to Section 6.2(a) or Section 6.5(a).

6.4 Distributions of Employee Deferrals Upon Death.

(a) Prior to Commencement of Benefits. In the event of a Participant's death prior to commencement of a benefit described in this ARTICLE VI, if timely elected by the Participant in accordance with Section 6.1, the Participant's Beneficiary may receive the distributable amount credited to the Participant's Deferral Accounts attributable to deferral elections pursuant to Article III in a lump sum payment of cash on the Payment Date following the Participant's death, regardless of the form of payment otherwise designated by the Participant pursuant to Section 6.2(a) or Section 6.5(a).

(b) After Commencement of Benefits. In the event of a Participant's death after commencement of a benefit described in this ARTICLE VI, if timely elected by the Participant in accordance with Section 6.1, the Participant's Beneficiary may receive the remaining distributable amount credited to the Participant's Deferral Accounts attributable to deferral elections pursuant to Article III in a lump sum payment of cash on the Payment Date following the Participant's death, regardless of the form of payment otherwise designated by the Participant pursuant to Section 6.2(a) or Section 6.5(a).

6.5 Scheduled In-Service Distributions of Employee Deferrals.

(a) Scheduled In-Service Distribution Election. Participants shall be entitled to elect to receive a Scheduled In-Service Distribution from a Deferral Account of amounts attributable to deferral elections pursuant to Article III. If a Participant has a Separation from Service with the Company prior to commencement of payment of the Scheduled In-Service Distribution, distribution will not be made pursuant to this Section 6.5(a) but will instead be made pursuant to Section 6.2(a) above. In the case of a Participant who has elected to receive a Scheduled In-Service Distribution, such Participant shall receive the distributable amount, with respect to the specified deferrals, including earnings thereon, which have been elected by the Participant to be subject to such Scheduled In-Service Distribution election. The Committee shall determine the earliest commencement date that may be elected by the Participant for each Scheduled In-Service Distribution and such date shall be indicated on the Participant Election, provided that such date may not be earlier than three (3) years from the date of the respective election. The Participant may elect to receive the Scheduled In-Service Distribution in a single lump sum or in decrementing counter annual installments over a period of up to ten (10) years. The lump sum payment or first annual installment (as applicable) payable pursuant to foregoing sentence will be made on the first Payment Date following the commencement date elected by Participant. A Participant may delay and change the form of a Scheduled In-Service Distribution, provided such extension complies with the requirements of Section 6.1(b).

(b) Relationship to Other Benefits. In the event that distribution of a Participant's Deferral Account is triggered under Sections 6.2, 6.3, or 6.4 prior to commencement of a Scheduled In-Service Distribution, the amounts subject to such Scheduled In-Service Distribution shall not be distributed under this Section 6.5, but rather shall be distributed in accordance with the other applicable Section of this ARTICLE VI.

6.6 Distribution of Company Contributions. Notwithstanding anything to the contrary in this Article VI, all amounts credited to each Participant's Deferral Account by the Company pursuant to Article IV shall be paid in one lump sum payment on the first Payment Date following the expiration of six (6) months from Participant's Separation from Service. For the avoidance of doubt, no Company contributions under this Plan shall be subject to Participant election pursuant to this Article VI.

6.7 Form of Distribution. Generally, distributions from the Plan shall be made in the form of cash, unless the Committee determines that such distributions shall be made in property.

6.8 Timing of Distribution. Payment of all distributions from the Plan shall be made on the first of the month or as soon as administratively practicable following such date, provided that in no instance shall a distribution be made later than the tenth of the month, in compliance with Treas. Reg. §1.409A-3(d).

6.9 Distribution of Small Benefit. Notwithstanding any initial election under Section 6.1(a), modification of election in Section 6.1(b), or any other provision of the Plan to the contrary, if the amount credited to the Participant's Deferral Account, plus the Participant's vested interest in any other plan or plans required to be aggregated with this Plan under Code Section 409A, is equal to or less than the applicable dollar amount under Section 402(g)(1)(B) of the Code (which is $19,500 for 2021), the Committee may, in its sole discretion, direct that such amount (and such other interest(s)) be distributed to the Participant (or Beneficiary, as applicable) in one lump-sum payment, provided that such exercise of discretion is evidenced in writing no later than the date of such payment.

6.10 Unforeseeable Emergency. Upon a finding that the Participant has suffered an Unforeseeable Emergency, in accordance with Code Section 409A and Treas. Reg. §1.409A-3(i)(3), the Committee may, at the request of the Participant, accelerate distribution of benefits and/or approve cancellation of deferral elections under the Plan, subject to the following conditions:

(a) the request to take an Unforeseeable Emergency distribution shall be made by filing a form provided by and filed with the Committee prior to the end of any calendar month;

(b) upon a finding that the Participant has suffered an Unforeseeable Emergency under Code Section 409A, the Committee may, at the request of the Participant, accelerate distribution of benefits and/or approve cancellation of current deferral elections (pursuant to Section 3.3(e)) under the Plan in the amount reasonably necessary to alleviate such Unforeseeable Emergency; the amount distributed pursuant to this Section with respect to the Unforeseeable Emergency shall not exceed the amount necessary to satisfy such Unforeseeable Emergency, plus amounts necessary to pay taxes reasonably anticipated as a result of the distribution, after taking into account the extent to which such hardship is or may be relieved through reimbursement or compensation by insurance or otherwise or by liquidation of the Participant's assets (to the extent the liquidation of such assets would not itself cause severe financial hardship); and

(c) the amount (if any) determined by the Committee as an Unforeseeable Emergency distribution shall be paid in a single cash lump sum as soon as practicable after the end of the calendar month in which the Unforeseeable Emergency determination is made by the Committee.

ARTICLE VII
BENEFICIARY DESIGNATIONS AND OTHER PAYEES

7.1 Beneficiaries.

(a) Beneficiary Designation. The Participant shall have the right, at any time, to designate any person or persons as Beneficiary (both primary and contingent) to whom payment under the Plan shall be made in the event of the Participant's death. No consent of the Participant's spouse or any other person is required for the Participant to name a Beneficiary. The Beneficiary designation shall be effective when it is submitted to and acknowledged by the Committee during the Participant's lifetime in the format prescribed by the Committee.

(b) Absence of Valid Designation. If a Participant fails to designate a Beneficiary, as provided above, or if every person designated as Beneficiary predeceases the Participant or dies prior to complete distribution of the Participant's benefits, then the Participant's estate shall be deemed to be the Beneficiary and the Committee shall direct the distribution of such benefits to the Participant's estate.

7.2 Payments to Minors. In the event any amount is payable under the Plan to a minor, payment shall not be made to the minor, but instead such payment shall be made (a) to that person's living parent(s) to act as custodian or (b) if that person's parents are then divorced, and one parent is the sole custodial parent, to such custodial parent, to act as custodian. If no parent is living and the Committee decides not to select another custodian to hold the funds for the minor, then payment shall be made to the duly appointed and currently acting guardian of the estate for the minor or, if no guardian of the estate for the minor is duly appointed and currently acting within 60 days after the date the amount becomes payable, payment shall be deposited with the court having jurisdiction over the estate of the minor.

7.3 Payments on Behalf of Persons Under Incapacity. In the event that any amount becomes payable under the Plan to a person who, in the sole judgment of the Committee, is considered by reason of physical or mental condition to be unable to give a valid receipt therefore, the Committee may direct that such payment be made to any person found by the Committee, in its sole judgment, to have assumed the care of such person. Any payment made pursuant to such determination shall constitute a full release and discharge of any and all liability of the Committee and the Company under the Plan.

ARTICLE VIII
LEAVE OF ABSENCE

8.1 Paid Leave of Absence. If a Participant is authorized by the Company to take a paid leave of absence from the employment of the Company, and such leave of absence does not constitute a Separation from Service, (a) the Participant shall continue to be considered eligible for the benefits provided under the Plan, and (b) deferrals shall continue to be withheld during such paid leave of absence in accordance with ARTICLE III.

8.2 Unpaid Leave of Absence. If a Participant is authorized by the Company to take an unpaid leave of absence from the employment of the Company for any reason, and such leave of absence does not constitute a Separation from Service, such Participant shall continue to be eligible for the benefits provided under the Plan. During the unpaid leave of absence, the Participant shall not be allowed to make any additional deferral elections. However, if the Participant returns to employment, the Participant may elect to defer for the Plan Year following his or her return to employment and for every Plan Year thereafter while a Participant in the Plan, provided such deferral elections are otherwise allowed and a Participant Election is delivered to and accepted by the Committee for each such election in accordance with ARTICLE III above.

ARTICLE IX
ADMINISTRATION

9.1 Committee. The Plan shall be administered by a Committee appointed by the Board; provided, that if the Board does not appoint a Committee, the Board shall act as the Committee. The Committee shall have the exclusive right and full discretion (a) to appoint agents, designees and delegates to act on its behalf, (b) to select and establish Funds, (c) to interpret the Plan, (d) to decide any and all matters arising hereunder (including the right to remedy possible ambiguities, inconsistencies, or admissions), (e) to make, amend and rescind such rules as it deems necessary for the proper administration of the Plan, and (f) to make all other determinations and resolve all questions of fact necessary or advisable for the administration of the Plan, including determinations regarding eligibility for benefits payable under the Plan. All interpretations of the Committee with respect to any matter hereunder shall be final, conclusive and binding on all persons affected thereby. No member of the Committee or agent thereof shall be liable for any determination, decision, or action made in good faith with respect to the Plan. The Company will indemnify and hold harmless the members of the Committee and its agents from and against any and all liabilities, costs, and expenses incurred by such persons as a result of any act, or omission, in connection with the performance of such persons' duties, responsibilities, and obligations under the Plan, other than such liabilities, costs, and expenses as may result from the bad faith, willful misconduct, or criminal acts of such persons.

9.2 Claims Procedure.

(a) Filing of a Claim. Any Participant, Beneficiary, or any duly authorized representative may file a claim for a Plan benefit to which the claimant believes that he or she is entitled. Such a claim must be in writing and delivered to the Committee in person or by certified mail, postage prepaid.

(b) Initial Determination of Claim.

(1) Committee Discretion. The Committee will have full discretion to deny or grant any claim in whole or in part.

(2) Claims (Other than Disability Claims). For all claims other than Disability Claims, within 90 days after receipt of such claim, the Committee will send to the claimant by certified mail, postage prepaid, notice of the granting or denying, in whole or in part, of such claim, unless special circumstances require an extension of time for processing the claim. In no event may the extension exceed 90 days from the end of the initial period. If such extension is necessary, the claimant will be given a notice to this effect prior to the expiration of the initial 90 day period. If the Committee fails to notify the claimant either that his or her claim has been granted or that it has been denied in whole or in part within the initial 90 day period or prior to the expiration of an extension, if applicable, then the claim shall be deemed to have been denied as of the last day of the applicable period, and the claimant then may request a review of his or her claim.

(3) Disability Claims. If a claim is related to any distribution or rights to which a Participant or other claimant may be entitled in connection with the Participant's Disability ("**Disability Claim**") then, as soon as reasonable but within 45 days after receipt of such claim, the Committee will send to the claimant by certified mail, postage prepaid, notice of the granting or denying, in whole or in part of such claim. This period within which the Committee must provide such notice may be extended twice, for up to 30 days per extension, provided that the Committee (i) determines that an extension is needed and beyond the control of the Plan, and (ii) notifies the claimant prior to the expiration of the initial 45 day period or of the first 30-day extension period. In the case of any extension request, the notice of extension shall specifically explain the standards on which entitlement to a benefit is based, the unresolved issues that prevent a decision on the claim, and the additional information needed to resolve those issues, and the claimant shall be afforded at least 45 days within which to provide the specified information. If the Committee fails to notify the claimant either that his or her claim has been granted or that it has been denied in whole or in part within the initial 45 day period or prior to the expiration of an extension, if applicable, then the claim shall be deemed to have been denied as of the last day of the applicable period, and the claimant then may request a review of his or her claim. The Committee must ensure that all Disability Claims and appeals are adjudicated in a manner designed to ensure the independence and impartiality of the persons involved in making the Disability determination.

(c) Duty of Committee Upon Denial of Claim.

(1) Claims (Other than Disability Claims). The Committee will provide

to every claimant who is denied a claim for benefits notice setting forth, in a manner calculated to be understood by the claimant, the following:

(i) The specific reason or reasons for the denial;

(ii) Specific reference to pertinent Plan provisions on which the denial is based;

(iii) A description of any additional material or information necessary for the claimant to perfect the claim and an explanation of why such material is necessary; and

(iv) Appropriate information as to the steps to be taken if the claimant wishes to submit his or her claim for review.

(2) Disability Claims. The Committee will provide to every claimant whose Disability Claim is denied a notice written in a culturally and linguistically appropriate manner, including information on how to access non-English language services provided by the Plan. The notice of the denial shall set forth the information contained in Section 9.2(c)(1) as well as set forth:

(i) An explanation of the basis for any disagreement with:

(1) the views of the health care professional(s) who treated or evaluated the claimant;

(2) the views of medical experts whose advice was obtained on behalf of the Plan in connection with the denial of the claimant's Disability Claim; and

(3) a disability determination made by the Social Security Administration;

(ii) Either the specific internal rules or standards the Plan relied upon in denying the Disability Claim, or alternatively, a statement that such rules or standards do not exist;

(iii) A statement that the claimant is entitled to receive, upon request and free of charge all documents and records relevant to the claimant's Disability Claim; and

(iv) A statement of any Plan limitation periods, including the expiration date, that apply to the claimant's right to bring a civil action under Section 502(a) of ERISA.

(d) Request for Review of Claim Denial.

(1) Review of Claims (Other than Disability Claims). If any claim,

other than a Disability Claim, is denied, the claimant or the claimant's duly authorized representative, upon written application to the Committee in person or by certified mail, postage prepaid, may request a review of such denial, may review pertinent documents, and may submit issues and comments in writing. A claimant must file such written request for review with the Committee within 60 days after the receipt by the claimant of a notice denying the initial claim or within 60 days after the claim is deemed to be denied. Upon its receipt of the request for review, the Committee will notify the Company of the request. Upon its receipt of notice of a request for review, the Company will appoint a person other than a member of the Committee to be the claims reviewer. The decision on review shall be rendered not later than 60 days after the Committee's receipt of the claimant's request for review, unless special circumstances require an extension of time for processing, in which case the 60 day period may be extended to 120 days if notice is provided to the claimant in writing within the initial 60 day period stating the reason for the extension. If notice of the decision on the review is not furnished in accordance with this subsection (1), the claim will be deemed denied and the claimant will be permitted to exercise his or her right to legal remedy pursuant to Section 9.2(f).

(2) Review of Disability Claims. If a Disability Claim is denied, the claimant or the claimant's duly authorized representative, upon written application to the Committee in person or by certified mail, postage prepaid, may request a review of such denial, may review pertinent documents, and may submit issues and comments in writing. A claimant must file such written request for review with the Committee within 180 days after the receipt by the claimant of a notice denying the initial claim or within 180 days after the claim is deemed to be denied. Upon its receipt of the request for review, the Committee will notify the Company of the request and the Company will appoint a person other than a member of the Committee to be the claims reviewer. Upon its receipt of the request for review, the Committee must provide the claimant, free of charge, and as soon as possible, any new or additional evidence considered or the rationale in connection with the Disability Claim. Such information must be provided in advance of the date on which the notice of the denial of the appeal is required to be provided, as discussed below in Section 9.2(e)(1), in order to give the claimant a reasonable opportunity to respond prior to that date. The decision on review shall be rendered not later than 45 days after the Committee's receipt of the claimant's request for review, unless special circumstances require an extension of time for processing, in which case the 45 day period may be extended to 90 days if notice is provided to the claimant in writing within the initial 45 day period stating the reason for the extension. If notice of the decision on the review is not furnished in accordance with this subsection (2), the claim will be deemed denied and the claimant will be permitted to exercise his or her right to legal remedy pursuant to Section 9.2(f).

(e) Claims Reviewer. The Committee will deliver to the claims reviewer all documents pertinent to the review. The claims reviewer will make a prompt decision on the review. The decision on review will be written in a manner calculated to be understood by the claimant, and will include specific reasons for the decision and specific references to the pertinent Plan provisions on which the decision is based.

(1) For Disability Claims, the Committee shall provide written notification of its decision to the claimant in a culturally and linguistically appropriate manner, including information on how to access non-English language services provided by the Plan. The notification shall include the information required to be included in the notice of the denial

discussed in Section 9.2(c)(2). The decision (regardless of whether it is adverse to the claimant) shall be made within a reasonable time period but not later than 45 days after receipt of the claimant's request for review, unless the claims reviewer determines that special circumstances require an extension of time to process the claim. If such an extension is required, written notice of the extension must be furnished to the claimant before the end of the initial 45 day period, explaining the special circumstances and the time and date a determination can be expected. In no event shall the extension exceed a period of 45 days from the end of the initial period.

(f) Legal Remedy. After exhaustion of the claims procedure as provided under this Plan, nothing will prevent any person from pursuing any other legal remedy.

(1) For Disability Claims.

(i) If the Plan fails to strictly adhere to all the procedures of this Section 9.2 with respect to a Disability Claim, and unless subsection (ii) applies, the claimant is deemed to have exhausted the administrative remedies available under the Plan and is entitled to pursue any available remedies under Section 502(a) of ERISA. Under such circumstances, the Disability Claim or appeal is deemed denied on review without the exercise of discretion by an appropriate fiduciary.

(ii) A claimant will not be deemed to have exhausted the administrative remedies available under the Plan if:

(1) The violations of the procedure are de minimis and do not cause, and are not likely to cause, prejudice or harm to the claimant, and

(2) The Committee demonstrates that the violation was for good cause or due to matters beyond the control of the claims reviewer and that the violation occurred in the context of an ongoing, good faith exchange of information between the claims reviewer and the claimant.

This subsection (ii) is not available if the violation is a part of a pattern or practice of violations by the Plan. The claimant may request a written explanation of the violation from the Committee and the Committee must provide such explanation within 10 days, including a specific description of its basis, if any, for asserting that the violation should not cause the procedures to be deemed exhausted. If a court rejects the claimant's request for immediate review on the basis that the Plan met the standards for the exception under subsection (ii), the Disability Claim shall be considered as refiled on appeal upon the Committee's receipt of the decision of the court, and the Committee must provide the claimant with notice of the resubmission within a reasonable period of time after the receipt of the court's decision.

ARTICLE X
MISCELLANEOUS

10.1 Termination of Plan. The Company may terminate the Plan at any time. In the event of a Plan termination, no new deferral elections shall be permitted. However, after the Plan termination the Deferral Account balances of such Participants shall continue to be credited with deferrals attributable to any deferral election that was in effect prior to the Plan termination to the extent necessary to comply with Code Section 409A, and additional amounts shall continue to be credited or debited to such Participants' Account balances pursuant to ARTICLE V. In addition, following a Plan termination, Participant Account balances shall remain in the Plan and shall not be distributed until such amounts become eligible for distribution in accordance with the other applicable provisions of the Plan. Notwithstanding the preceding sentence, to the extent permitted by Treas. Reg. §1.409A-3(j)(4)(ix) or as otherwise permitted under Code Section 409A, the Company may provide that upon termination of the Plan, all Deferral Account balances of the Participants shall be distributed, subject to and in accordance with any rules established by the Company deemed necessary to comply with Code Section 409A.

10.2 Amendment. The Company may, at any time, amend or modify the Plan in whole or in part. Notwithstanding the foregoing, no amendment or modification shall be effective to decrease the value of a Participant's vested Account balance in existence at the time the amendment or modification is made.

10.3 Unsecured General Creditor. The benefits paid under the Plan shall be paid from the general assets of the Company, and the Participant and any Beneficiary or their heirs or successors shall be no more than unsecured general creditors of the Company with no special or prior right to any assets of the Company for payment of any obligations hereunder. It is the intention of the Company that this Plan be unfunded for purposes of ERISA and the Code.

10.4 Restriction Against Assignment. The Company shall pay all amounts payable hereunder only to the person or persons designated by the Plan and not to any other person or entity. No part of a Participant's Accounts shall be liable for the debts, contracts, or engagements of any Participant, Beneficiary, or their successors in interest, nor shall a Participant's Accounts be subject to execution by levy, attachment, or garnishment or by any other legal or equitable proceeding, nor shall any such person have any right to alienate, anticipate, sell, transfer, commute, pledge, encumber, or assign any benefits or payments hereunder in any manner whatsoever. No part of a Participant's Accounts shall be subject to any right of offset against or reduction for any amount payable by the Participant or Beneficiary, whether to the Company or any other party, under any arrangement other than under the terms of this Plan.

10.5 Withholding. The Participant shall make appropriate arrangements with the Company for satisfaction of any federal, state or local income tax withholding requirements, Social Security and other employee tax or other requirements applicable to the granting, crediting, vesting or payment of benefits under the Plan. There shall be deducted from each payment made under the Plan or any other Compensation payable to the Participant (or Beneficiary) all taxes that are required to be withheld by the Company in respect to such payment or this Plan. To the extent permissible under Code Section 409A, the Company shall have the right to reduce any payment (or other Compensation) by the amount of cash sufficient to provide the amount of said taxes.

10.6 Code Section 409A. The Company intends that the Plan comply with the requirements of Code Section 409A (and all applicable Treasury Regulations and other guidance issued thereunder) and shall be operated and interpreted consistent with that intent.

10.7 Effect of Payment. Any payment made in good faith to a Participant or the Participant's Beneficiary shall, to the extent thereof, be in full satisfaction of all claims against the

Committee, its members, and the Company.

10.8 Errors in Account Statements, Deferrals or Distributions. In the event an error is made in an Account statement, such error shall be corrected on the next statement following the date such error is discovered. In the event of an operational error, including, but not limited to, errors involving deferral amounts, overpayments or underpayments, such operational error shall be corrected in a manner consistent with and as permitted by any correction procedures established under Code Section 409A. If any portion of a Participant's Account(s) under this Plan is required to be included in income by the Participant prior to receipt due to a failure of this Plan to comply with the requirements of Code Section 409A, the Committee may determine that such Participant shall receive a distribution from the Plan in an amount equal to the lesser of (i) the portion of his or her Account required to be included in income as a result of the failure of the Plan to comply with the requirements of Code Section 409A, or (ii) the unpaid vested Account balance.

10.9 Domestic Relations Orders. Notwithstanding any provision in this Plan to the contrary, in the event that the Committee receives a domestic relations order, as defined in Code Section 414(p)(1)(B), pursuant to which a court has determined that a spouse or former spouse of a Participant has an interest in the Participant's benefits under the Plan, the Committee shall have the right to immediately distribute the spouse's or former spouse's vested interest in the Participant's benefits under the Plan to such spouse or former spouse to the extent necessary to fulfill such domestic relations order, provided that such distribution is in accordance with the requirements of Code Section 409A.

10.10 Employment Not Guaranteed. Nothing contained in the Plan, nor any action taken hereunder, shall be construed as a contract of employment or as giving any Participant any right to continue the provision of services in any capacity whatsoever to the Company.

10.11 No Guarantee of Tax Consequences. The Company, Board, and Committee make no commitment or guarantee to any Participant that any federal, state or local tax treatment will apply or be available to any person eligible for benefits under the Plan and assume no liability whatsoever for the tax consequences to any Participant.

10.12 Successors of the Company. The rights and obligations of the Company under the Plan shall inure to the benefit of, and shall be binding upon, the successors and assigns of the Company.

10.13 Notice. Any notice or filing required or permitted to be given to the Company or the Participant under this Agreement shall be sufficient if in writing and hand-delivered, or sent by registered or certified mail, in the case of the Company, to the principal office of the Company, directed to the attention of the Committee, and in the case of the Participant, to the last known address of the Participant indicated on the employment records of the Company. Such notice shall be deemed given as of the date of delivery or, if delivery is made by mail, as of the date shown on the postmark on the receipt for registration or certification. Notices to the Company may be permitted by electronic communication according to specifications established by the Committee.

10.14 Headings. Headings and subheadings in this Plan are inserted for convenience of reference only and are not to be considered in the construction of the provisions hereof.

10.15 Gender, Singular and Plural. All pronouns and any variations thereof shall be deemed to refer to the masculine, feminine, or neuter, as the identity of the person or persons may require. As the context may require, the singular may be read as the plural and the plural as the singular.

10.16 Governing Law. The Plan is intended to be an unfunded plan maintained primarily to provide deferred compensation benefits for a select group of "management or highly compensated employees" within the meaning of Sections 201, 301 and 401 of ERISA and therefore to be exempt from Parts 2, 3 and 4 of Title I of ERISA. To the extent any provision of, or legal issue relating to, this Plan is not fully preempted by federal law, such issue or provision shall be governed by the laws of the State of Delaware.

EXHIBIT 31.1

I, Stephen D. Kelley, certify that:

1. I have reviewed this quarterly report on Form 10-Q for the period ended September 30, 2021 of Advanced Energy Industries, 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: November 9, 2021

/s/ Stephen D. Kelley

Stephen D. Kelley
Chief Executive Officer

EXHIBIT 31.2

I, Paul Oldham, certify that:

1. I have reviewed this quarterly report on Form 10-Q for the period ended September 30, 2021 of Advanced Energy Industries, 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: November 9, 2021

/s/ Paul Oldham

Paul Oldham
Chief Financial Officer & Executive Vice President

EXHIBIT 32.1

Certification of the Chief Executive Officer
Pursuant to 18 U.S.C. Section 1350,
as Adopted Pursuant to Section 906
of the Sarbanes-Oxley Act of 2002

I hereby certify, pursuant to 18 U.S.C. Section 1350, that the accompanying Quarterly Report on Form 10-Q for the period ended September 30, 2021, of Advanced Energy Industries, Inc., fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Quarterly Report on Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of Advanced Energy Industries, Inc.

Date: November 9, 2021

/s/ Stephen D. Kelley
Stephen D. Kelley
Chief Executive Officer

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBIT 32.2

Certification of the Chief Financial Officer
Pursuant to 18 U.S.C. Section 1350,
as Adopted Pursuant to Section 906
of the Sarbanes-Oxley Act of 2002

I hereby certify, pursuant to 18 U.S.C. Section 1350, that the accompanying Quarterly Report on Form 10-Q for the period ended September 30, 2021, of Advanced Energy Industries, Inc., fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Quarterly Report on Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of Advanced Energy Industries, Inc.

Date: November 9, 2021

/s/ Paul Oldham
Paul Oldham
Chief Financial Officer & Executive Vice President

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.