

**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 March 31, 2019

OR

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

Commission File Number 001-37839



TPI Composites, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

20-1590775
(I.R.S. Employer
Identification Number)

8501 N. Scottsdale Rd.
Gainey Center II, Suite 100
Scottsdale, AZ 85253

(480) 305-8910

(Address, including zip code, and telephone number,
including area code, of registrant's principal executive offices)

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

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, par value \$0.01	TPIC	NASDAQ Global Market

As of April 30, 2019, there were 35,015,147 shares of common stock outstanding.

TPI COMPOSITES, INC. AND SUBSIDIARIES

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of the federal securities law. All statements other than statements of historical facts contained in this Quarterly Report on Form 10-Q, including statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. In many cases, you can identify forward-looking statements by terms such as “may,” “should,” “expects,” “plans,” “anticipates,” “could,” “intends,” “target,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar words. Forward-looking statements contained in this Quarterly Report on Form 10-Q include, but are not limited to, statements about:

- growth of the wind energy market and our addressable market;
- the potential impact of the increasing prevalence of auction-based tenders in the wind energy market and increased competition from solar energy on our gross margins and overall financial performance;
- our future financial performance, including our net sales, cost of goods sold, gross profit or gross margin, operating expenses, ability to generate positive cash flow, and ability to achieve or maintain profitability;
- changes in domestic or international government or regulatory policy, including without limitation, changes in trade policy;
- the sufficiency of our cash and cash equivalents to meet our liquidity needs;
- our ability to attract and retain customers for our products, and to optimize product pricing;
- our ability to effectively manage our growth strategy and future expenses, including our startup and transition costs;
- competition from other wind blade and wind blade turbine manufacturers;
- the discovery of defects in our products;
- our ability to successfully expand in our existing wind energy markets and into new international wind energy markets;
- our ability to successfully expand our transportation business and execute upon our strategy of entering new markets outside of wind energy;
- worldwide economic conditions and their impact on customer demand;
- our ability to maintain, protect and enhance our intellectual property;
- our ability to comply with existing, modified or new laws and regulations applying to our business, including the imposition of new taxes, duties or similar assessments on our products;
- the attraction and retention of qualified employees and key personnel;
- our ability to maintain good working relationships with our employees, and avoid labor disruptions, strikes and other disputes with labor unions that represent certain of our employees;
- our ability to procure adequate supplies of raw materials and components to fulfill our wind blade volume commitments to our customers; and
- the potential impact of one or more of our customers becoming bankrupt or insolvent, or experiencing other financial problems.

These forward-looking statements are only predictions. These statements relate to future events or our future financial performance and involve known and unknown risks, uncertainties and other important factors that may cause our actual results, levels of activity, performance or achievements to materially differ from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. We have described in the “Risk Factors” section of our Annual Report on Form 10-K filed with the United States Securities and Exchange Commission (SEC) on March 5, 2019 (the Annual Report on Form 10-K) the principal risks and uncertainties that we believe could cause actual results to differ from these forward-looking statements. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as guarantees of future events.

The forward-looking statements in this Quarterly Report on Form 10-Q represent our views as of the date of this Quarterly Report on Form 10-Q. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we undertake no obligation to update any forward-looking

statement to reflect events or developments after the date on which the statement is made or to reflect the occurrence of unanticipated events except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date after the date of this Quarterly Report. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, or investments we may make.

PART I—FINANCIAL INFORMATION

ITEM I. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

TPI COMPOSITES, INC. AND SUBSIDIARIES

Condensed Consolidated Balance Sheets
(In thousands, except par value data)

	March 31, 2019	December 31, 2018
	(Unaudited)	
Assets		
Current assets:		
Cash and cash equivalents	\$ 78,319	\$ 85,346
Restricted cash	1,850	3,555
Accounts receivable	167,209	176,815
Contract assets	133,110	116,708
Prepaid expenses and other current assets	43,297	26,038
Inventories	6,159	5,735
Total current assets	429,944	414,197
Property, plant, and equipment, net	171,886	159,423
Operating lease right of use assets	135,903	—
Other noncurrent assets	44,111	31,235
Total assets	\$ 781,844	\$ 604,855
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable and accrued expenses	\$ 218,290	\$ 199,078
Accrued warranty	39,533	36,765
Current maturities of long-term debt	41,567	27,058
Current operating lease liabilities	17,008	—
Contract liabilities	7,537	7,143
Total current liabilities	323,935	270,044
Long-term debt, net of debt issuance costs and current maturities	117,871	110,565
Noncurrent operating lease liabilities	123,064	—
Other noncurrent liabilities	3,697	3,289
Total liabilities	568,567	383,898
Commitments and contingencies (Note 10)		
Stockholders' equity:		
Common shares, \$0.01 par value, 100,000 shares authorized, 35,100 shares issued and 35,014 shares outstanding at March 31, 2019 and 100,000 shares authorized, 34,745 shares issued and 34,678 shares outstanding at December 31, 2018	351	347
Paid-in capital	317,227	311,771
Accumulated other comprehensive loss	(14,869)	(14,392)
Accumulated deficit	(87,085)	(74,981)
Treasury stock, at cost, 86 shares at March 31, 2019 and 67 shares at December 31, 2018	(2,347)	(1,788)
Total stockholders' equity	213,277	220,957
Total liabilities and stockholders' equity	\$ 781,844	\$ 604,855

See accompanying notes to unaudited condensed consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Operations
(In thousands, except per share data)

	Three Months Ended March 31,	
	2019	2018
	(Unaudited)	
Net sales	\$ 299,780	\$ 253,981
Cost of sales	283,038	210,988
Startup and transition costs	18,178	14,735
Total cost of goods sold	301,216	225,723
Gross profit (loss)	(1,436)	28,258
General and administrative expenses	10,220	11,163
Income (loss) from operations	(11,656)	17,095
Other income (expense):		
Interest income	51	41
Interest expense	(1,999)	(3,338)
Realized loss on foreign currency remeasurement	(3,802)	(4,011)
Miscellaneous income	702	818
Total other expense	(5,048)	(6,490)
Income (loss) before income taxes	(16,704)	10,605
Income tax benefit (provision)	4,600	(1,957)
Net income (loss)	\$ (12,104)	\$ 8,648
Weighted-average common shares outstanding:		
Basic	34,906	34,049
Diluted	34,906	35,479
Net income (loss) per common share:		
Basic	\$ (0.35)	\$ 0.25
Diluted	\$ (0.35)	\$ 0.24

See accompanying notes to unaudited condensed consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Comprehensive Income (Loss)
(In thousands)

	Three Months Ended March 31,	
	2019	2018
	(Unaudited)	
Net income (loss)	\$ (12,104)	\$ 8,648
Other comprehensive income (loss):		
Foreign currency translation adjustments	1,333	1,890
Unrealized loss on hedging derivatives, net of taxes of \$481 for the three months ended March 31, 2019	(1,810)	—
Comprehensive income (loss)	\$ (12,581)	\$ 10,538

See accompanying notes to unaudited condensed consolidated financial statements.

T PI COMPOSITES, INC. AND SUBSIDIARIES
Condensed Consolidated Statement of Changes in Stockholders' Equity
(In thousands)

	Common		Paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Treasury stock, at cost	Total stockholders' equity
	Shares	Amount					
Balance at December 31, 2018	34,745	\$ 347	\$ 311,771	\$ (14,392)	\$ (74,981)	\$ (1,788)	\$ 220,957
Net loss	—	—	—	—	(12,104)	—	(12,104)
Share-based compensation expense	—	—	821	—	—	—	821
Issuances under share-based compensation plan	355	4	4,635	—	—	—	4,639
Common stock repurchased for treasury	—	—	—	—	—	(559)	(559)
Other comprehensive loss	—	—	—	(477)	—	—	(477)
Balance at March 31, 2019	<u>35,100</u>	<u>\$ 351</u>	<u>\$ 317,227</u>	<u>\$ (14,869)</u>	<u>\$ (87,085)</u>	<u>\$ (2,347)</u>	<u>\$ 213,277</u>

See accompanying notes to unaudited condensed consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Cash Flows
(In thousands)

	Three Months Ended	
	March 31,	
	2019	2018
	(Unaudited)	
Cash flows from operating activities:		
Net income (loss)	\$ (12,104)	\$ 8,648
Adjustments to reconcile net income (loss) to net cash used in operating activities:		
Depreciation and amortization	10,659	7,072
Share-based compensation expense	985	2,388
Amortization of debt issuance costs	51	181
Loss on sale of assets	2,235	—
Changes in assets and liabilities:		
Accounts receivable	8,489	3,626
Contract assets and liabilities	(15,899)	(22,710)
Operating lease right of use assets and operating lease liabilities	4,169	—
Inventories	(419)	(93)
Prepaid expenses and other current assets	(17,217)	(8,211)
Other noncurrent assets	(14,052)	734
Accounts payable and accrued expenses	17,782	3,241
Accrued warranty	2,768	2,250
Other noncurrent liabilities	462	(158)
Net cash used in operating activities	<u>(12,091)</u>	<u>(3,032)</u>
Cash flows from investing activities:		
Purchase of property and equipment	(18,709)	(11,714)
Net cash used in investing activities	<u>(18,709)</u>	<u>(11,714)</u>
Cash flows from financing activities:		
Proceeds from revolving loans	6,000	—
Repayments of term and revolving loans	—	(938)
Net proceeds from accounts receivable financing	13,208	8,093
Proceeds from working capital loans	2,228	—
Principal repayments of finance leases	(2,929)	—
Net repayments of other debt	(1,445)	(2,978)
Proceeds from exercise of stock options	4,572	585
Repurchase of common stock including shares withheld in lieu of income taxes	(559)	(272)
Net cash provided by financing activities	<u>21,075</u>	<u>4,490</u>
Impact of foreign exchange rates on cash, cash equivalents and restricted cash	993	386
Net change in cash, cash equivalents and restricted cash	(8,732)	(9,870)
Cash, cash equivalents and restricted cash, beginning of year	89,376	152,437
Cash, cash equivalents and restricted cash, end of period	<u>\$ 80,644</u>	<u>\$ 142,567</u>
Supplemental disclosures of cash flow information:		
Cash paid for interest	\$ 1,940	\$ 3,127
Cash paid for income taxes, net	4,781	1,434
Supplemental disclosures of noncash investing and financing activities:		
Accrued capital expenditures in accounts payable	6,409	4,425

See accompanying notes to unaudited condensed consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES
Notes to Unaudited Condensed Consolidated Financial Statements

Note 1. Summary of Operations and Significant Accounting Policies

Description of Business

TPI Composites, Inc. is the holding company that conducts substantially all of its business operations through its direct and indirect subsidiaries (collectively, the Company). The Company was founded in 1968 and has been producing composite wind blades since 2001. The Company's knowledge and experience of composite materials and manufacturing originates with its predecessor company, Tillotson Pearson Inc., a leading manufacturer of high-performance sail and powerboats along with a wide range of composite structures used in other industrial applications. Following the separation from the boat building business in 2004, the Company reorganized in Delaware as LCSH Holding, Inc. and then changed its corporate name to TPI Composites, Inc. in 2008. The Company is currently headquartered in Scottsdale, Arizona and has expanded its global footprint to include domestic facilities in Newton, Iowa; Fall River, Massachusetts; Warren, Rhode Island and Santa Teresa, New Mexico and international facilities in Dafeng, China; Taicang Port, China; Taicang City, China; Yangzhou, China; Juárez, Mexico; Matamoros, Mexico; Izmir, Turkey; Kolding, Denmark and Chennai, India.

References to TPI Composites, Inc, the "Company," "we," "us" or "our" in these notes refer to TPI Composites, Inc. and its consolidated subsidiaries.

Basis of Presentation

We divide our business operations into four geographic operating segments—(1) the United States (U.S.), (2) Asia, (3) Mexico and (4) Europe, the Middle East, Africa and India (EMEAI) as follows:

- Our U.S. segment includes (1) the manufacturing of wind blades at our Newton, Iowa plant, (2) the manufacturing of precision molding and assembly systems used to manufacture wind blades at our Warren, Rhode Island facility, (3) the manufacturing of composite solutions for the transportation industry, which we also conduct at our existing Rhode Island facility as well as at our Fall River, Massachusetts facility and at a second manufacturing facility in Newton, Iowa, (4) wind blade inspection and repair services in North America, (5) our advanced engineering center in Kolding, Denmark, which provides technical and engineering resources to our manufacturing facilities and (6) our corporate headquarters, the costs of which are included in general and administrative expenses.
- Our Asia segment includes (1) the manufacturing of wind blades at our facilities in Taicang Port, China; Dafeng, China and Yangzhou, China, the latter of which commenced operations in March 2019, (2) the manufacturing of precision molding and assembly systems at our Taicang City, China facility and (3) wind blade inspection and repair services.
- Our Mexico segment manufactures wind blades from three facilities in Juárez, Mexico and a facility in Matamoros, Mexico at which we commenced operations in July 2018. In November 2018, we entered into a new lease agreement with a third party for a new precision molding and assembly systems manufacturing facility in Juárez, Mexico and we commenced operations at this facility in March 2019. This segment also performs wind blade inspection and repair services.
- Our EMEAI segment manufactures wind blades from two facilities in Izmir, Turkey and also performs wind blade inspection and repair services. In February 2019, we entered into a new lease agreement with a third party for a new manufacturing facility that will be built near Chennai, India and we expect to commence operations at this facility in the first half of 2020.

The accompanying condensed consolidated financial statements include the accounts of TPI Composites, Inc. and all of our majority owned subsidiaries. All significant intercompany transactions and balances have been eliminated.

The condensed consolidated financial statements included herein have been prepared by us without audit, pursuant to the rules and regulations of the SEC and should be read in conjunction with the audited consolidated financial statements for the year ended December 31, 2018 included in our Annual Report on Form 10-K. Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States (GAAP) have been condensed or omitted, as permitted by the SEC, although we believe the disclosures that are made are adequate to make the information presented herein not misleading. The accompanying condensed consolidated financial statements reflect, in the opinion of our management, all normal recurring adjustments necessary to present fairly our financial position at March 31, 2019, and the results of our operations, comprehensive income (loss) and cash flows for the periods presented. Interim results for the three months ended March 31, 2019 and 2018 are not necessarily indicative of the results to be expected for the full years.

TPI COMPOSITES, INC. AND SUBSIDIARIES
Notes to Unaudited Condensed Consolidated Financial Statements

Recently Issued Accounting Pronouncements

Accounting Pronouncements Adopted in 2019

Leases

In February 2016, the Financial Accounting Standards Board (FASB) established Topic 842, *Leases*, by Accounting Standards Update (ASU) No. 2016-02, which requires lessees to recognize leases on-balance sheet and disclose key information about leasing arrangements. Topic 842 was subsequently amended by ASU No. 2018-01, *Land Easement Practical Expedient for Transition to Topic 842*; ASU No. 2018-10, *Codification Improvements to Topic 842, Leases*; and ASU No. 2018-11, *Targeted Improvements*. The new standard establishes a right of use model that requires a lessee to recognize a right of use (ROU) asset and related lease liability on the balance sheet for all leases with a term longer than 12 months. Leases are to be classified as either finance or operating, with classification affecting the pattern and classification of expense recognition in the income statement.

We adopted this new standard on January 1, 2019 and used the effective date as our date of initial application. Consequently, we have not provided financial information and the disclosures required under the new standard for periods before January 1, 2019.

The adoption of this standard had a material effect on our financial statements, the most significant of which related to the recognition of ROU assets and lease liabilities on our balance sheet for our real estate, equipment and auto operating leases and providing significant new disclosures about our leasing activities.

We elected the package of practical expedients, which permits us not to reassess under the new standard our prior conclusions about lease identification, lease classification and initial direct costs. The new standard also provided practical expedients for an entity's ongoing accounting. We elected the short-term lease recognition exemption for all leases that qualify. Accordingly, for those leases that qualified, we did not recognize ROU assets or lease liabilities, and this includes not recognizing ROU assets or lease liabilities for existing short-term leases. We also elected the practical expedient to not separate lease and non-lease components for all of our leases.

See Note 8, *Leases*, for further discussion of the adoption of this standard.

Income Taxes

In February 2018, the FASB issued ASU 2018-02, *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which allows a reclassification from accumulated other comprehensive income to retained earnings stranded tax effects resulting from the Tax Reform Act. We adopted this standard on January 1, 2019 and it did not have a material impact on our condensed consolidated financial statements.

Share-Based Compensation

In June 2018, the FASB issued ASU 2018-07, *Improvements to Nonemployee Share-Based Payment Accounting*, which expands the scope of Topic 718, *Compensation-Stock Compensation*, to include share-based payment transactions for acquiring goods and services from nonemployees. We adopted this standard on January 1, 2019 and it did not have a material impact on our condensed consolidated financial statements.

In July 2018, the FASB issued ASU 2018-09, *Codification Improvements*, which contains amendments that affect a wide variety of Topics in the Codification, including amendment to Subtopic 718-40, *Compensation-Stock Compensation-Income Taxes*, that clarifies the timing of when an entity should recognize excess tax benefits. We adopted this standard on January 1, 2019 and it did not have a material impact on our condensed consolidated financial statements.

Accounting Pronouncements Not Yet Adopted

Internal Use Software

In August 2018, the FASB issued ASU 2018-15, *Intangibles - Goodwill and Other-Internal Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*, which allows for the capitalization of implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal use software license).

TPI COMPOSITES, INC. AND SUBSIDIARIES
Notes to Unaudited Condensed Consolidated Financial Statements

This standard is effective for all public business entities for annual and interim periods beginning after December 15, 2021, with early adoption permitted. We plan to adopt this standard during 2019 and do not expect it to have a material impact on our condensed consolidated financial statements.

Fair Value Measurement

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*, which modifies the disclosure requirements in Topic 820.

This standard is effective for all public business entities for annual and interim periods beginning after December 15, 2019, with early adoption permitted. We will adopt this standard as of January 1, 2020 and we are currently evaluating the impact of the adoption of this standard on our condensed consolidated financial statements.

Goodwill

In January 2017, the FASB issued ASU 2017-04, *Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*, which eliminates Step 2 from the goodwill impairment test.

This standard is effective for all public business entities for annual and interim periods beginning after December 15, 2019, with early adoption permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. We plan to adopt this standard during 2019 when we perform our annual impairment tests and we are currently evaluating the impact of the adoption of this standard on our condensed consolidated financial statements.

Significant Accounting Policies

Revenue Recognition

The majority of our revenue is generated from long-term contracts associated with manufacturing of wind blades and related services. We account for a long-term contract when it has the approval from both parties, the rights of the parties are identified, payment terms are established, the contract has commercial substance and the collectability of consideration is probable.

To determine the proper revenue recognition method for each long-term contract, we evaluate whether the original contract should be accounted for as one or more performance obligations. This evaluation requires judgment and the decisions reached could change the amount of revenue and gross profit recorded in a given period. As most of our contracts contain multiple performance obligations, we allocate the total transaction price to each performance obligation based on the estimated relative standalone selling prices of the promised goods or services underlying each performance obligation. Our manufacturing services are customer specific and involve production of items that cannot be sold to other customers due to the customers' protected intellectual property; therefore, we allocate the total transaction price under our contracts with multiple performance obligations using the contractually stated prices, as these prices represent the relative standalone selling price based on an expected cost plus margin model.

Revenue is primarily recognized over time as we have an enforceable right to payment upon termination and we may not use or sell the product to fulfill other customers' contracts. In addition, the customer does not have return or refund rights for items produced that conform to the specifications included in the contract. Because control transfers over time, revenue is recognized based on the extent of progress towards the completion of the performance obligation. We use the cost-to-cost input measure of progress for our contracts as this method provides the best representation of the production progress towards satisfaction of the performance obligation as the materials are distinct to the product being manufactured because of customer specifications provided for in the contract, the costs incurred are proportional to the progress towards completion of the product, and the products do not involve significant pre-fabricated component parts. Under the cost-to-cost method, progress and the related revenue recognition is determined by a ratio of direct costs incurred to date in fulfillment of the contract to the total estimated direct costs required to complete the performance obligation.

Determining the revenue to be recognized for services performed under our manufacturing contracts involves significant judgments and estimates relating to the total consideration to be received and the expected total costs to complete the performance obligation. The judgments and estimates relating to the total consideration to be received include the amount of variable consideration as our contracts typically provide the customer with a range of production output options from guaranteed minimum volume obligations to the production capacity of the facility, and customers will provide periodic non-cancellable commitments for the number of wind blades to be produced over the term of the agreement. We use historical experience, customer commitments and forecasted future production based on the capacity of the plant to estimate the total revenue to be received to complete the performance obligation. In

TPI COMPOSITES, INC. AND SUBSIDIARIES
Notes to Unaudited Condensed Consolidated Financial Statements

addition, the amount of revenue per unit produced may vary based on the costs of production of the wind blades as we may be able to change the price per unit based on changes in the cost of production. Further, some of our contracts provide opportunities for us to share in labor and material cost savings as well as absorb some additional costs as an incentive for more efficient production, both of which impact the margin realized on the contract and ultimately the total amount of revenue to be recognized. Additionally, certain of our customer contracts provide for concessions by us for missed production deadlines.

We estimate variable consideration at the most likely amount to which we expect to be entitled. We include estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. Our estimates of variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of our anticipated performance and all information available to us at the time of the estimate and may materially change as additional information becomes known.

Our contracts may be modified to account for changes in specifications of products and changing requirements. If the contract modifications are for goods or services that are not distinct from the existing contract, they are accounted for as if they were part of the original contract. The effect of a contract modification on the transaction price and the measure of progress for the performance obligation to which it relates is recognized as an adjustment to revenue on a cumulative catch-up basis. If contract modifications are for goods and services that are distinct from the existing contract and increases the amount of consideration reflecting the standalone sale price of the additional goods or services, then the contract modification is accounted for as a separate contract and is evaluated for one or more performance obligations.

Each reporting period, we evaluate the progress towards satisfaction of each performance obligation based on any contract modifications that have occurred, cost incurred to date, and an estimate of the expected future revenue and costs to be incurred to complete the performance obligation. Based on this analysis, any changes in estimates of revenue, cost of sales, contract assets and liabilities and the related impact to operating income are recognized on a cumulative catch-up basis, which recognizes in the current period the cumulative effect of the changes on current and prior periods based on the percentage of completion of the performance obligation.

Wind blade pricing is based on annual commitments of volume as established in our customer contracts and orders less than committed volume may result in a higher price per wind blade to our customers. Orders in excess of annual commitments may result in discounts to our customers from the contracted price for the committed volume. Our customers typically provide periodic purchase orders with the price per wind blade given the current cost of the bill of materials, labor requirements and volume desired. We record an allowance for expected utilization of early payment discounts which are reported as a reduction of the related revenue.

Precision molding and assembly systems included in a customer's contract are based upon the specific engineering requirements and design determined by the customer and are specific to the wind blade design and function desired. From the customer's engineering specifications, a job cost estimate is developed along with a production plan, and the desired margin is applied based on the location the work is to be performed and complexity of the customer's design. Precision molding and assembly systems are generally built to produce wind blades which may be manufactured by us in production runs specified in the customer contract.

Contract assets primarily relate to our rights to consideration for work completed but not billed at the reporting date on manufacturing services contracts. The contract assets are transferred to accounts receivable when the rights become unconditional, which generally occurs when customers are invoiced upon the determination that a product conforms to the contract specifications and invoices are due based on each customer's negotiated payment terms, which range from 15 to 90 days. We apply the practical expedient that allows us to exclude payment terms under one year from the transfer of a promised good or service from consideration of a significant financing component in its contracts. With regards to the production of precision molding and assembly systems, our contracts generally call for progress payments to be made in advance of production. Generally, payment is made at certain percentage of completion milestones with the final payment due upon delivery to the manufacturing facility. These progress payments are recorded within contract liabilities as current liabilities in the condensed consolidated balance sheets and are reduced as we record revenue over time. We evaluate indications that a customer may not be able to meet the obligations under our long-term supply agreements to determine if an account receivable or contract asset may be impaired.

Our customers may request, in situations where they do not have space available to receive products or do not want to take possession of products immediately for other reasons, that their finished products be stored by us in one of our facilities. Most of our contracts provide for a limited number of wind blades to be stored during the period of the contract with any additional wind blades stored subject to additional storage fees, which are included in the wind blade performance obligation revenue.

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Revenue related to non-recurring engineering and freight services provided under our customer contracts is recognized at a point in time following the transfer of control of the promised services to the customer. Customers usually pay the carrier directly for the cost of shipping associated with items produced. When we pay the shipping costs, we apply the practical expedient that allows us to account for shipping and handling as a fulfillment costs and include the revenue in the associated performance obligation and the costs are included in cost of goods sold.

Taxes assessed by a governmental authority that are both imposed on and concurrent with specific revenue-producing transactions, that are collected by us from a customer, are excluded from revenue.

Warranty Expense

We provide a limited warranty for our wind blades and related precision molding and assembly systems, including materials and workmanship, with terms and conditions that vary depending on the product sold, generally for periods that range from two to five years. We also provide a limited warranty for our transportation products, including materials and workmanship, with terms and conditions that vary depending on the product sold, generally for a period of approximately two years. Warranty expense is recorded based upon estimates of future repairs using a probability-based methodology that considers previous warranty claims, identified quality issues and industry practices. Once the warranty period has expired, any remaining unused warranty accrual for the specific products is reversed against the current year warranty expense amount.

Warranty accrual at March 31 consisted of the following:

	2019
	(in thousands)
Warranty accrual at beginning of year	\$ 36,765
Accrual during the period	4,917
Cost of warranty services provided during the period	(989)
Reversal of reserves upon warranty expiration	(1,160)
Warranty accrual at end of period	<u>\$ 39,533</u>

Leases

We determine if an arrangement is a lease at inception. Operating leases are included in operating lease right of use (ROU) assets, current operating lease liabilities, and noncurrent operating lease liabilities in the condensed consolidated balance sheets. Finance leases are included in property, plant and equipment, current maturities of long-term debt, and long-term debt, net of debt issuance costs and current maturities in the condensed consolidated balance sheets.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of future minimum lease payments over the lease term at commencement date. Variable payments are not included in ROU assets or lease liabilities and can vary from period to period based on asset usage or our proportionate share of common costs. The implicit rate within our leases is generally not determinable and, therefore, the incremental borrowing rate at lease commencement is utilized to determine the present value of lease payments. We estimate our incremental borrowing rate based on third party lender quotes to obtain secured debt in a like currency for a similar asset over a timeframe similar to the term of the lease. The ROU asset also includes any lease prepayments made and any initial direct costs incurred and excludes lease incentives. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term. We have elected not to recognize ROU assets or lease liabilities for leases with a term of 12 months or less.

We have lease agreements with lease and non-lease components. We have elected to apply the practical expedient to account for these components as a single lease component for all classes of underlying assets.

Treasury Stock

Common stock purchased for treasury is recorded at historical cost. Transactions in treasury shares relate to share-based compensation plans and are recorded at weighted-average cost.

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Net Income (Loss) Per Common Share Calculation

The basic net income (loss) per common share is computed by dividing the net income (loss) by the weighted-average number of common shares outstanding during a period. Diluted net income per common share is computed by dividing the net income by the weighted-average number of common shares outstanding plus potentially dilutive securities using the treasury stock method. The table below reflects the calculation of the weighted-average number of common shares outstanding, using the treasury stock method, used in computing basic and diluted earnings per common share:

	Three Months Ended	
	March 31,	
	2019	2018
	(in thousands)	
Basic weighted-average shares outstanding	34,906	34,049
Effect of dilutive awards	—	1,430
Diluted weighted-average shares outstanding	34,906	35,479

Share-based compensation awards of 1,678,000 shares and 175,000 shares have been excluded from the computations of diluted net income (loss) per common share for the three months ended March 31, 2019 and 2018, respectively, because their effects would be anti-dilutive. In addition, certain PSUs have been excluded from the computation of diluted shares outstanding for the three months ended March 31, 2019 and 2018 as the performance conditions had not yet been met.

Financial Instruments

Interest Rate Swap

We use interest rate swap contracts to mitigate our exposure to interest rate fluctuations associated with our credit agreement (the Credit Agreement) that we entered into in April 2018. We do not use such swap contracts for speculative or trading purposes.

To offset the variability of future interest payments on the Credit Agreement arising from changes in the London Interbank Offered Rate (LIBOR), in April 2018, we entered into an interest rate swap agreement with a financial institution for a notional amount of \$75.0 million with an expiration date of April 2023. This interest rate swap effectively hedges \$75.0 million of the future variable rate LIBOR interest expense to a fixed rate interest expense. The derivative instrument qualified for accounting as a cash flow hedge in accordance with Financial Accounting Standards Board (FASB) Accounting Standard Codification (ASC) Topic 815, *Derivatives and Hedging*, and we designated it as such.

The settlement value of the interest rate swap is \$1.5 million as of March 31, 2019 and is included in other noncurrent liabilities in the condensed consolidated balance sheet. The unrealized loss on the swap of \$1.2 million, net of tax, is included in the condensed consolidated statement of other comprehensive income (loss). The settlement value of the interest rate swap was \$0.8 million as of December 31, 2018 and was included in other noncurrent assets in the condensed consolidated balance sheet.

Restricted Cash

We provide for cash deposits for letters of guarantee used for customs clearance related to our China locations which are reported as restricted cash in our condensed consolidated balance sheets. We also maintain a long-term deposit in interest bearing accounts, related to fully cash-collateralized letters of credit in connection an equipment lessor in Iowa which is reported within other noncurrent assets in our condensed consolidated balance sheets. The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the condensed consolidated balance sheets which total the same such amounts in the condensed consolidated statements of cash flows:

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	March 31, 2019	December 31, 2018	March 31, 2018	December 31, 2017
	(in thousands)			
Cash and cash equivalents	\$ 78,319	\$ 85,346	\$ 138,841	\$ 148,113
Restricted cash	1,850	3,555	3,251	3,849
Restricted cash included within other noncurrent assets	475	475	475	475
Total cash, cash equivalents and restricted cash shown in the condensed consolidated statements of cash flows	<u>\$ 80,644</u>	<u>\$ 89,376</u>	<u>\$ 142,567</u>	<u>\$ 152,437</u>

Use of Estimates

The preparation of these condensed consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Note 2. Revenue From Contracts with Customers

The following tables represents the disaggregation of our net sales revenue by product for each of our reportable segments (in thousands):

	Three Months Ended March 31, 2019				
	U.S.	Asia	Mexico	EMEA1	Total
	(in thousands)				
Wind blade sales	\$ 31,891	\$ 62,128	\$ 79,038	\$ 103,893	\$ 276,950
Precision molding and assembly systems sales	144	6,215	4,849	—	11,208
Transportation sales	6,216	—	—	—	6,216
Other sales	3,377	375	778	876	5,406
Total net sales	<u>\$ 41,628</u>	<u>\$ 68,718</u>	<u>\$ 84,665</u>	<u>\$ 104,769</u>	<u>\$ 299,780</u>

	Three Months Ended March 31, 2018				
	U.S.	Asia	Mexico	EMEA1	Total
	(in thousands)				
Wind blade sales	\$ 38,945	\$ 68,171	\$ 56,043	\$ 71,021	\$ 234,180
Precision molding and assembly systems sales	1,863	8,179	764	—	10,806
Transportation sales	4,053	—	—	—	4,053
Other sales	1,263	1,320	1,157	1,202	4,942
Total net sales	<u>\$ 46,124</u>	<u>\$ 77,670</u>	<u>\$ 57,964</u>	<u>\$ 72,223</u>	<u>\$ 253,981</u>

In addition, most of our net sales are made directly to our customers, primarily large multi-national wind turbine manufacturers, under our long-term contracts which are typically five years in length.

Contract Assets and Liabilities

Contract assets consist of the amount of revenue recognized over time for performance obligations in production where control has transferred to the customer but the contract does not yet allow for the customer to be billed. Typically, customers are billed when the product finishes production and meets the technical specifications contained in the contract. The contract assets are recorded as current assets in the condensed consolidated balance sheets. Contract liabilities consist of advance payments in excess of revenue earned. These amounts were historically recorded as customer deposits which usually relate to progress payments received as precision molding and assembly systems were being manufactured. The contract liabilities are recorded as current liabilities in the condensed consolidated balance sheets and are reduced as we record revenue over time.

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These contract assets and liabilities are reported on the condensed consolidated balance sheets net on a contract-by-contract basis at the end of each reporting period, as demonstrated in the table below.

Contract assets and contract liabilities consisted of the following:

	March 31, 2019	December 31, 2018	\$ Change
	(in thousands)		
Gross contract assets	\$ 144,624	\$ 127,568	\$ 17,056
Less: reclassification from contract liabilities	(11,514)	(10,860)	(654)
Contract assets	<u>\$ 133,110</u>	<u>\$ 116,708</u>	<u>\$ 16,402</u>
	(in thousands)		
	March 31, 2019	December 31, 2018	\$ Change
Gross contract liabilities	\$ 19,051	\$ 18,003	\$ 1,048
Less: reclassification to contract assets	(11,514)	(10,860)	(654)
Contract liabilities	<u>\$ 7,537</u>	<u>\$ 7,143</u>	<u>\$ 394</u>

Contracts assets increased by \$16.4 million from December 31, 2018 to March 31, 2019 due to incremental unbilled production during the three months ended March 31, 2019. Contracts liabilities increased by \$0.4 million from December 31, 2018 to March 31, 2019 due to the amounts billed to customers exceeding the revenue earned related to precision molding and assembly systems and wind blades being produced in the three months ended March 31, 2019.

The time it takes to produce a single blade is typically between 5 to 7 days. The time it takes to produce a mold is typically between 3 to 6 months.

For the three months ended March 31, 2019, we recognized \$7.1 million of revenue that was included in the corresponding contract liability balance at the beginning of the period.

Performance Obligations

Remaining performance obligations represent the estimated transaction price of firm orders for which work has not been performed and excludes any unexercised contract options.

As of March 31, 2019, the aggregate amount of the transaction price allocated to the remaining performance obligations to be satisfied in future periods was approximately \$5.1 billion. We estimate that we will recognize the remaining performance obligations as revenue as follows: 22 percent in the remainder of 2019, 30 percent in 2020, 21 percent in 2021, 15 percent in 2022 and the remaining 12 percent in 2023.

For the three months ended March 31, 2019, net revenue recognized from our performance obligations satisfied in previous periods decreased by \$14.7 million as compared to a decrease of \$4.9 million in the same period of 2018. The current year decrease primarily related to changes in certain of our estimated total contract values and related percentage of completion estimates.

Pre-Production Investments

We recognize an asset for deferred costs incurred to fulfill a contract when those costs meet all of the following criteria: (a) the costs relate directly to a contract or to an anticipated contract that we can specifically identify; (b) the costs generate or enhance our resources that will be used in satisfying performance obligations in the future; and, (c) the costs are expected to be recovered. We capitalize the costs related to training our workforce to execute the manufacturing services and other facility set-up costs related to preparing for production of a specific contract. We factor these costs into our estimated cost analysis for the overall contract. Costs capitalized are amortized over the number of units produced during the contract term. As of March 31, 2019, the cost and accumulated amortization of such assets totaled \$6.5 million and \$2.3 million, respectively. As of December 31, 2018, the cost and accumulated

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amortization of such assets totaled \$ 5.6 million and \$ 2.1 million, respectively. These amounts are included in other noncurrent assets in the condensed consolidated balance sheets and in cost of goods sold within the condensed consolidated statements of operations .

Note 3. Significant Risks and Uncertainties

Our revenues and receivables are from a small number of customers. As such, our production levels are dependent on these customers' orders. See Note 11, *Concentration of Customers*. In April 2019, one of our customers, Senvion GmbH (Senvion), entered into a provisional self-administration procedure concerning its assets as ordered by the Local Court of Hamburg, Germany pursuant to the Insolvency Act in Germany. See Note 13, *Subsequent Event* , for more details relating to this provisional self-administration procedure and its effect on our results of operations for the three months ended March 31, 2019. As a result of the information presented in Note 13, *Subsequent Event* , and as of March 31, 2019, we had outstanding accounts receivable due from Senvion of \$7.9 million and a contract asset related to the Senvion contract of \$3.1 million. These amounts, which we believe are realizable based on the facts known to us as of May 8, 2019, relate to completed blades we expect to deliver to Senvion.

In February 2019, our manufacturing production employees in Matamoros, Mexico, who are represented by a labor union, went on strike demanding an increase in their hourly wage rate and the payment of an annual bonus, even though our collective bargaining agreement does not provide for such incentives. During this work stoppage, production was halted at our Matamoros manufacturing facility from February 15, 2019 until March 2, 2019. Although we ultimately resolved the matter in early March 2019, this disruption, along with the loss of nearly 50% of the workforce in Matamoros because of actions taken during the strike and a resulting slower than planned start up in 2018, had a significant impact on production during the three months ended March 31, 2019. Given the heavy demand for wind blades in the U.S. market in 2019, our liquidated damages provisions with our customers are quite stringent. As a result, in addition to the impact of the lost production, we have reduced the total consideration expected to be received under a customer contract for the liquidated damages incurred in the three months ended March 31, 2019 by \$3.8 million.

We maintain our U.S. cash in bank deposit accounts that, at times, exceed U.S. federally insured limits. U.S. bank accounts are guaranteed by the Federal Deposit Insurance Corporation (FDIC) in an amount up to \$250,000 during 2019 and 2018. At March 31, 2019 and December 31, 2018, we had \$40.4 million and \$53.7 million, respectively, of cash in deposit accounts in high quality U.S. banks, which was in excess of FDIC limits. We have not experienced losses in any such accounts.

We also maintain cash in bank deposit accounts outside the U.S. with no insurance. At March 31, 2019, this includes \$20.9 million in China, \$12.0 million in Turkey, \$3.2 million in India and \$1.8 million in Mexico. We have not experienced losses in these accounts. In addition, at March 31, 2019, we have short-term deposits in interest bearing accounts of \$1.8 million in China, which are reported as restricted cash in our condensed consolidated balance sheets. At March 31, 2019, we also have long-term deposits in interest bearing accounts of \$0.5 million in Iowa which are reported as restricted cash within the caption other noncurrent assets in our condensed consolidated balance sheets.

Note 4. Accounts Receivable

Accounts receivable consisted of the following:

	March 31, 2019	December 31, 2018
	(in thousands)	
Trade accounts receivable	\$ 163,781	\$ 172,667
Other accounts receivable	3,428	4,148
Total accounts receivable	<u>\$ 167,209</u>	<u>\$ 176,815</u>

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Note 5. Property, Plant and Equipment, Net

Property, plant and equipment, net consisted of the following:

	March 31, 2019	December 31, 2018
	(in thousands)	
Machinery and equipment	\$ 124,647	\$ 119,737
Buildings	14,522	15,080
Leasehold improvements	41,366	38,747
Office equipment and software	27,109	26,363
Furniture	21,594	19,579
Vehicles	285	287
Construction in progress	25,374	17,390
Total property, plant and equipment, gross	254,897	237,183
Accumulated depreciation	(83,011)	(77,760)
Property, plant and equipment, net	<u>\$ 171,886</u>	<u>\$ 159,423</u>

Total depreciation expense for the three months ended March 31, 2019 and 2018 was \$10.4 million and \$6.8 million, respectively.

As of March 31, 2019, the cost and accumulated amortization of assets under finance leases were \$45.3 million and \$13.0 million, respectively.

Note 6. Long-Term Debt, Net of Debt Issuance Costs and Current Maturities

Long-term debt, net of debt issuance costs and current maturities, consisted of the following:

	March 31, 2019	December 31, 2018
	(in thousands)	
Senior revolving loan—U.S.	\$ 96,414	\$ 90,414
Accounts receivable financing—EMEAI	27,732	14,524
Equipment financing—EMEAI	10,896	12,197
Working capital loans—Asia	2,228	—
Equipment finance lease—U.S.	107	111
Equipment finance lease—EMEAI	7,302	6,738
Equipment finance lease—Mexico	15,586	14,517
Total debt - principal	160,265	138,501
Less: Debt issuance costs	(827)	(878)
Total debt, net of debt issuance costs	159,438	137,623
Less: Current maturities of long-term debt	(41,567)	(27,058)
Long-term debt, net of debt issuance costs and current maturities	<u>\$ 117,871</u>	<u>\$ 110,565</u>

Note 7. Share-Based Compensation Plans

Our Amended and Restated 2015 Stock Option and Incentive Plan (the 2015 Plan) provides for the issuance of incentive stock options, non-qualified stock options, stock appreciation rights, restricted stock units, restricted stock awards, unrestricted stock awards, cash-based awards, performance share awards and dividend equivalent rights to certain employees, non-employee directors and consultants. Under the 2015 Plan, we have granted awards of stock options, restricted stock units (RSUs) and performance-based restricted stock units (PSUs) to certain employees and non-employee directors.

During the three months ended March 31, 2019, we issued to certain employees and non-employee directors an aggregate of 134,970 timed-based RSUs, 116,330 PSUs that vest upon achievement of a cumulative, three-year Adjusted EBITDA target measured from

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January 1, 2019 through December 31, 2021, and 1,650,711 PSUs that vest upon achievement of certain stock price hurdles for the period of the grant date through December 31, 2021. 100% of the time-based RSUs vest on the third anniversary date of the grant date. Each of the time-based and performance-based awards are subject to the recipient's continued service with us, the terms and conditions of the 2015 Plan and the applicable award agreement.

The share-based compensation expense recognized in the condensed consolidated statements of operations was as follows:

	Three Months Ended	
	March 31,	
	2019	2018
	(in thousands)	
Cost of goods sold	\$ 177	\$ 412
General and administrative expenses	808	1,976
Total share-based compensation expense	\$ 985	\$ 2,388

The share-based compensation expense recognized by award type was as follows:

	Three Months Ended	
	March 31,	
	2019	2018
	(in thousands)	
RSUs	\$ 922	\$ 1,318
Stock options	436	990
PSUs	(373)	80
Total share-based compensation expense	\$ 985	\$ 2,388

As of March 31, 2019, the unamortized cost of the outstanding RSUs and PSUs was \$6.3 million and \$6.9 million, respectively, which we expect to recognize in the condensed consolidated financial statements over weighted-average periods of approximately 2.4 years and 2.8 years, respectively. Additionally, the total unrecognized cost related to non-vested stock option awards was \$1.4 million, which we expect to recognize in the condensed consolidated financial statements over a weighted-average period of approximately 1.4 years. Share-based compensation expense for the three months ended March 31, 2019 includes a reversal of expense related to the probability that certain PSUs will not fully vest.

The summary of activity under our incentive plans is as follows:

	Shares Available for Grant	Stock Options		RSUs		PSUs		
		Shares	Weighted- Average Exercise Price	Options Exercisable	Units	Weighted- Average Grant Date Fair Value	Units	Weighted- Average Grant Date Fair Value
Balance as of December 31, 2018	5,980,605	2,600,694	\$ 13.41	1,415,948	425,876	\$ 18.75	249,249	\$ 22.67
Increase in shares authorized	1,387,123	—	—		—	—	—	—
Granted	(442,365)	25,994	29.24		134,970	29.26	281,401	29.26
Exercised/vested	—	(305,225)	14.98		(50,031)	23.29	—	—
Forfeited/cancelled	35,227	(27,000)	12.44		(5,249)	22.94	(2,978)	22.67
Balance as of March 31, 2019	6,960,590	2,294,463	13.39	1,273,290	505,566	21.06	527,672	26.18

The fair value of RSUs which vested during the three months ended March 31, 2019 was \$1.2 million. In addition, during the three months ended March 31, 2019, we repurchased 18,917 shares for \$0.6 million related to tax withholding requirements on vested RSU awards.

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The following table summarizes the outstanding and exercisable stock option awards as of March 31, 2019 :

	Options Outstanding			Options Exercisable	
	Shares	Weighted-Average Remaining Contractual Life (in years)	Weighted-Average Exercise Price	Shares	Weighted-Average Exercise Price
Range of Exercise Prices:					
\$8.49	16,397	1.3	\$ 8.49	16,397	\$ 8.49
\$ 10.87	1,489,747	6.2	10.87	873,472	10.87
\$11.00 to \$16.53	320,001	6.8	15.95	179,600	16.16
\$17.68 to \$18.70	233,457	7.2	18.68	131,406	18.70
\$18.77 to \$29.26	234,861	8.6	21.00	72,415	20.00
\$8.49 to \$29.26	2,294,463	6.6	13.39	1,273,290	12.91

Note 8. Leases

We have operating and finance leases for our manufacturing facilities, warehouses, offices, automobiles and certain of our machinery and equipment. Our leases have remaining lease terms of between one and 15 years, some of which may include options to extend the leases up to five years.

The components of lease cost were as follows:

	Three Months Ended March 31, 2019 (in thousands)
Operating lease cost	\$ 7,753
Finance lease cost	
Amortization of assets under finance leases	\$ 1,514
Interest on finance leases	408
Total finance lease cost	\$ 1,922

Future minimum lease payments under noncancelable leases as of March 31, 2019 were as follows:

	Operating Leases	Finance Leases
	(in thousands)	
Year Ending December 31,		
2019	\$ 19,749	\$ 7,227
2020	26,025	6,308
2021	22,456	6,087
2022	21,461	5,340
2023	20,931	575
Thereafter	78,964	3
Total future minimum lease payments	189,586	25,540
Less: interest	(49,514)	(2,545)
Total lease liabilities	\$ 140,072	\$ 22,995

Total lease liabilities as of March 31, 2019 were as follows:

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	Operating Leases	Finance Leases
	(in thousands)	
Current operating lease liabilities	\$ 17,008	\$ —
Current maturities of long-term debt	-	7,645
Noncurrent operating lease liabilities	123,064	-
Long-term debt, net of debt issuance costs and current maturities	-	15,350
Total lease liabilities	<u>\$ 140,072</u>	<u>\$ 22,995</u>

As previously disclosed in our 2018 Annual Report on Form 10-K and under the previous accounting standard, future minimum lease payments under noncancelable leases as of December 31, 2018 were as follows:

	Operating Leases	Capital Leases
	(in thousands)	
2019	\$ 28,173	\$ 9,639
2020	26,871	5,098
2021	22,942	4,839
2022	22,065	4,102
2023	21,583	305
Thereafter	61,049	-
Total future minimum lease payments	<u>\$ 182,683</u>	<u>23,983</u>
Less: interest		(2,617)
Total lease liabilities		<u>\$ 21,366</u>

As of December 31, 2018, the cost and accumulated amortization of assets under capital leases were \$41.3 million and \$11.7 million, respectively.

Other information related to leases was as follows:

	Three Months Ended March 31, 2019
	(in thousands)
Supplemental Cash Flow Information	
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	\$ 7,542
Operating cash flows from finance leases	408
Financing cash flows from finance leases	2,929
Right of use assets obtained in exchange for lease obligations:	
Operating leases	11,883
Finance leases	4,703
	March 31, 2019
Weighted-Average Remaining Lease Term (In Years)	
Operating leases	7.9
Finance leases	3.5
Weighted-Average Discount Rate	
Operating leases	7.4%
Finance leases	7.0%

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As of March 31, 2019, we have an additional lease related to our new manufacturing facility near Chennai, India of approximately \$ 60 million which has not yet commenced, but which we expect will commence in the first half of 2020 with an initial term of ten years.

Note 9. Income Taxes

Income taxes for the three months ended March 31, 2019 were lower than for the three months ended March 31, 2018 primarily due to the pretax loss in 2019 as compared to pretax income in 2018. Our annualized effective tax rate for 2019 is expected to be higher than in 2018 due to losses not benefitted in jurisdictions where a full valuation allowance is recorded.

We also continue to not record a deferred tax liability related to unremitted foreign earnings as we maintain our assertion to indefinitely reinvest our unremitted foreign earnings.

An ownership change under Sections 382 and 383 of the Internal Revenue Code was deemed to occur in June 2018. In general, a Section 382 and 383 ownership change occurs if there is a cumulative change in our ownership by “5% shareholders” (as defined in the Internal Revenue Code of 1986, as amended) that exceeds 50 percentage points over a rolling three-year period. Based on the analysis performed, however, we do not believe that the Section 382 and 383 annual limitation will materially impact our ability to utilize the tax attributes that existed as of the date of the ownership. Additional ownership changes in the future could result in additional limitations on our net operating loss carryforwards and credits.

No changes in tax law occurred during the quarter which have a material impact on our income tax provision.

Note 10. Commitments and Contingencies

Legal Proceedings

From time to time, we may be involved in disputes or litigation relating to claims arising out of our operations.

In March 2015, a complaint was filed against us in the Superior Court of the State of Arizona (Maricopa County) by a former employee, alleging that we had agreed to compensate the employee upon any future sale of the Company. We filed a motion to dismiss the complaint in April 2015, which was denied. We subsequently filed an answer to the complaint in July 2015 denying the substantive allegations of the complaint. The parties completed court-ordered mediation in December 2015 but were not able to reach a settlement. We filed a motion for summary judgment to dismiss the complaint in April 2016 and the court denied the motion in August 2016. The court has set a trial date for June 2019. We continue to deny the substantive allegations of the complaint and intend to vigorously defend this lawsuit; however, we are currently unable to determine the ultimate outcome of this case.

In June 2018, Iowa OSHA, a division of the Iowa Department of Labor, issued a citation and notification of penalty to us alleging that certain of our workplace practices and conditions at our Newton, Iowa wind blade manufacturing facility had violated the Iowa Occupational Safety and Health Act. Specifically, the citation cited us for multiple alleged violations and proposed that we pay an aggregate penalty of \$0.2 million. In June 2018, we notified Iowa OSHA that we were contesting all of the alleged violations and proposed penalties. In June 2018, the Labor Commissioner of the Iowa Department of Labor subsequently filed a complaint with the State of Iowa Employment Appeal Board, petitioning the appeal board to affirm the citation and notification of penalty that Iowa OSHA issued to us. In July 2018, we then filed a response with the appeal board denying the substantive allegations of the complaint. In March 2019, we entered into a settlement agreement with the Iowa Department of Labor pursuant to which we agreed to make a settlement payment of \$0.1 million and to implement certain safety enhancements at our Newton, Iowa manufacturing facility to fully resolve this matter.

From time to time, we are party to various lawsuits, claims, and other legal proceedings that arise in the ordinary course of business, some of which are covered by insurance. Upon resolution of any pending legal matters, we may incur charges in excess of presently established reserves. Our management does not believe that any such charges would, individually or in the aggregate, have a material adverse effect on our financial condition, results of operations or cash flows.

TPI COMPOSITES, INC. AND SUBSIDIARIES
Notes to Unaudited Condensed Consolidated Financial Statements

Note 11. Concentration of Customers

Revenues from certain customers in excess of 10 percent of our total consolidated revenues are as follows:

Customer	Three Months Ended March 31,			
	2019		2018	
	Revenues	% of Total	Revenues	% of Total
Vestas	\$ 128,614	42.9%	\$ 85,269	33.6%
GE	84,529	28.2	87,828	34.6
Nordex	54,868	18.3	48,201	19.0

Trade accounts receivable from certain customers in excess of 10 percent of our total consolidated trade accounts receivable are as follows:

Customer	March 31, 2019	December 31, 2018
	% of Total	% of Total
Vestas	49.2%	46.7%
Nordex	24.2%	25.7%

Note 12. Segment Reporting

Our operating segments are defined geographically as the U.S., Asia, Mexico and EMEAI. Financial results are aggregated into four reportable segments based on quantitative thresholds. All of our segments operate in their local currency, however a portion of the revenue attributable to our China and Mexico segments is derived in U.S. dollars because certain of our domestic subsidiaries are the contracting parties to the associated customer supply agreements.

The following tables set forth certain information regarding each of our segments:

	Three Months Ended March 31,	
	2019	2018
	(in thousands)	
Revenues by segment:		
U.S.	\$ 41,628	\$ 46,124
Asia	68,718	77,670
Mexico	84,665	57,964
EMEAI	104,769	72,223
Total revenues	<u>\$ 299,780</u>	<u>\$ 253,981</u>
Revenues by geographic location (1):		
U.S.	\$ 41,628	\$ 46,124
China	68,718	77,670
Mexico	84,665	57,964
Turkey and India	104,769	72,223
Total revenues	<u>\$ 299,780</u>	<u>\$ 253,981</u>
Income (loss) from operations:		
U.S. (2)	\$ (14,503)	\$ (9,050)
Asia	(8,800)	6,417
Mexico	(424)	4,258
EMEAI	12,071	15,470
Total income (loss) from operations	<u>\$ (11,656)</u>	<u>\$ 17,095</u>

TPI COMPOSITES, INC. AND SUBSIDIARIES
Notes to Unaudited Condensed Consolidated Financial Statements

	March 31, 2019	December 31, 2018
(in thousands)		
Property, plant and equipment, net:		
U.S.	\$ 34,628	\$ 34,825
Asia (China)	36,664	31,924
Mexico	71,461	65,981
EMEAI (Turkey and India)	29,133	26,693
Total property, plant and equipment, net	\$ 171,886	\$ 159,423

- (1) Revenues are attributable to countries based on the location where the product is manufactured or the services are performed.
- (2) The losses from operations in our U.S. segment includes corporate general and administrative costs of \$8.0 million and \$11.2 million for the three months ended March 31, 2019 and 2018, respectively.

Note 13. Subsequent Event

In April 2019, one of our customers, Senvion, entered into a provisional self-administration procedure concerning its assets as ordered by the Local Court of Hamburg, Germany pursuant to the Insolvency Act in Germany. As a result of this development, as of March 31, 2019, we have reevaluated the outstanding accounts receivables due from Senvion, the revenue recognition and contract asset related to the Senvion contract as well as the property, plant and equipment at our Taicang Port, China facility where we manufactured blades for Senvion. As a result of that reevaluation, we have revised our estimate of consideration to be received under the contract which reduced revenues recorded in the three months ended March 31, 2019 in the amount of \$10.5 million. We have also revised the useful life of property, plant and equipment which was being used to fulfill the Senvion contract and does not have an alternative use to us. The revised useful lives align with the remaining term of the Senvion contract. The revision of the useful life for these assets resulted in the acceleration of \$2.9 million of depreciation expense which was recorded in cost of goods sold in the condensed consolidated statement of operations for the three months ended March 31, 2019. This reversal of revenue and acceleration of depreciation expense had an adverse impact on our results of operations for the three months ended March 31, 2019. In addition, we expect that the projected lost production from Senvion for the balance of 2019 also will have an adverse effect on our results of operations for the year ending December 31, 2019.

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

You should read the following discussion and analysis of our financial condition and results of operations together with our condensed consolidated financial statements and the related notes and other financial information appearing elsewhere in this Quarterly Report on Form 10-Q (Form 10-Q). Some of the information contained in this discussion and analysis or set forth elsewhere in this Form 10-Q, including information with respect to plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those described in or implied by these forward-looking statements as a result of various factors, including those discussed below and elsewhere in this Form 10-Q or in our previously filed Annual Report on Form 10-K, particularly those under "Risk Factors."

OVERVIEW

Our Company

We are the largest and only independent manufacturer of composite wind blades for the wind energy market with a global manufacturing footprint. We enable many of the industry's leading wind turbine original equipment manufacturers (OEM), who have historically relied on in-house production, to outsource the manufacturing of some of their wind blades through our global footprint of advanced manufacturing facilities strategically located to serve large and growing wind markets in a cost-effective manner. Given the importance of wind energy capture, turbine reliability and cost to power producers, the size, quality and performance of wind blades have become highly strategic to our OEM customers. As a result, we have become a key supplier to our OEM customers in the manufacture of wind blades and related precision molding and assembly systems. We have entered into long-term supply agreements pursuant to which we dedicate capacity at our facilities to our customers in exchange for their commitment to purchase minimum annual volumes of wind blade sets, which consist of three wind blades. As of March 31, 2019, our long-term wind and transportation supply agreements provide for minimum aggregate volume commitments from our customers of approximately \$3.6 billion and encourage our customers to purchase additional volume up to, in the aggregate, a total contract value of approximately \$6.3 billion through the end of 2023. This collaborative dedicated supplier model provides us with contracted volumes that generate significant revenue visibility, drive capital efficiency and allow us to produce wind blades at a lower total delivered cost, while ensuring critical dedicated capacity for our customers. Our wind blade and precision molding and assembly systems manufacturing businesses accounted for approximately 96% of our total net sales for each of the three months ended March 31, 2019 and 2018. We also leverage our advanced composite technology and history of innovation to supply high strength, lightweight and durable composite products to the transportation market.

We divide our business operations into four geographic operating segments - (1) the United States (U.S.), (2) Asia, (3) Mexico and (4) Europe, the Middle East, Africa and India (EMEAI) as follows:

- Our U.S. segment includes (1) the manufacturing of wind blades at our Newton, Iowa plant, (2) the manufacturing of precision molding and assembly systems used to manufacture wind blades at our Warren, Rhode Island facility, (3) the manufacturing of composite solutions for the transportation industry, which we also conduct at our existing Rhode Island facility as well as at our Fall River, Massachusetts facility and at a second manufacturing facility in Newton, Iowa, (4) wind blade inspection and repair services in North America, (5) our advanced engineering center in Kolding, Denmark, which provides technical and engineering resources to our manufacturing facilities and (6) our corporate headquarters, the costs of which are included in general and administrative expenses.
- Our Asia segment includes (1) the manufacturing of wind blades at our facilities in Taicang Port, China; Dafeng, China and Yangzhou, China, the latter of which commenced operations in March 2019, (2) the manufacturing of precision molding and assembly systems at our Taicang City, China facility and (3) wind blade inspection and repair services.
- Our Mexico segment manufactures wind blades from three facilities in Juárez, Mexico and a facility in Matamoros, Mexico at which we commenced operations in July 2018. In November 2018, we entered into a new lease agreement with a third party for a new precision molding and assembly systems manufacturing facility in Juárez, Mexico and we commenced operations at this facility in March 2019. This segment also performs wind blade inspection and repair services.
- Our EMEAI segment manufactures wind blades from two facilities in Izmir, Turkey and also performs wind blade inspection and repair services. In February 2019, we entered into a new lease agreement with a third party for a new manufacturing facility that will be built near Chennai, India and we expect to commence operations at this facility in the first half of 2020.

KEY TRENDS AND RECENT DEVELOPMENTS AFFECTING OUR BUSINESS

In February 2019, our manufacturing production employees in Matamoros, Mexico, who are represented by a labor union, went on strike demanding a n increase in their hourly wage rate and the payment of an annual bonus , even though our collective bargaining agreement does not provide for such incentives . During this work stoppage , production was halted at our Matamoros manufacturing facility from February 15, 2019 until March 2, 2019. Although we ultimately resolved the matter in early March 2019, this disruption, along with the loss of nearly 50% of the workforce in Matamoros because of actions taken during the strike and a slower than planned start up in 2018, had a significant impact on production during the three months ended March 31, 2019. A material amount of production was lost during the three months ended March 31 , 2019 and the lower production volume will likely extend into the second and third quarters as new associates are trained and additional manufacturing lines are ramping up. Given the heavy demand for wind blades in the U.S. market in 2019, our liquidated damages provisions with our customers are quite stringent. As a result, in addition to the impact of the lost production, we have reduced the total consideration expected to be received under a customer contract for the liquidated damages incurred in the three months ended March 31, 2019 . We expect these production delays will also impact volume in the second and third quarters and may result in significant liquidated damages charges during the balance of 2019. We estimate that the total impact of the lost volume, liquidated damages and compensation costs related to the settlement of the strike is expected to be approximately \$25 million for the twelve months ending December 31, 2019 .

In April 2019, one of our customers, Senvion GmbH (Senvion), entered into a provisional self-administration procedure concerning its assets as ordered by the Local Court of Hamburg, Germany pursuant to the Insolvency Act in Germany. As a result of this development, as of March 31, 2019, we have reevaluated the outstanding accounts receivables due from Senvion, the revenue recognition and contract asset related to the Senvion contract as well as the property, plant and equipment at our Taicang Port, China facility where we manufactured blades for Senvion. As a result of that reevaluation, we have revised our estimate of consideration to be received under the contract which reduced revenues recorded in the three months ended March 31, 2019. We have also revised the useful life of property, plant and equipment which was being used to fulfill the Senvion contract and does not have an alternative use to us. The reevaluation had an adverse impact on our results of operations for the three months ended March 31, 2019 and we expect that the projected lost production from Senvion for the balance of 2019 also will have an adverse effect on our results of operations for the year ending December 31, 2019. The effect of these adjustments on our loss from operations in the condensed consolidated statements of operations totaled \$13.4 million in the three months ended March 31, 2019.

Our results of operations for the three months ended March 31, 2019 also were adversely impacted by the extended startup of our second Iowa manufacturing facility.

COMPONENTS OF RESULTS OF OPERATIONS

Net Sales

We recognize revenue from manufacturing services over time as our customers control the product as it is produced, and we may not use or sell the product to fulfill other customers' contracts. Net sales include amounts billed to our customers for our products, including wind blades, precision molding and assembly systems and other products and services, as well as the progress towards the completion of the performance obligation for products in progress, which is determined on a ratio of direct costs incurred to date in fulfillment of the contract to the total estimated direct costs required to complete the performance obligation.

Cost of Goods Sold

Cost of goods sold includes the costs we incur at our production facilities to make products saleable on both products invoiced during the period as well as products in progress towards the completion of each performance obligation. Cost of goods sold includes such items as raw materials, direct and indirect labor and facilities costs, including purchasing and receiving costs, plant management, inspection costs, production process improvement activities, product engineering and internal transfer costs. In addition, all depreciation associated with assets used in the production of our products is also included in cost of goods sold. Direct labor costs consist of salaries, benefits and other personnel related costs for employees engaged in the manufacturing of our products and services.

Startup costs represent the unallocated overhead related to both new manufacturing facilities as well as new lines in existing manufacturing facilities. Transition costs represent the unallocated overhead related to the transition of wind blade models. The startup and transition costs are primarily fixed overhead costs incurred during the period production facilities are under-utilized while transitioning wind blade models and ramping up manufacturing, which are not allocated to products and are expensed as incurred. The cost of sales for the initial wind blades from a new model manufacturing line is generally higher than when the line is operating at optimal production volume levels due to inefficiencies during ramp-up related to labor hours per blade, cycle times per blade and raw material usage. Additionally, manufacturing overhead as a percentage of net sales is generally higher during the period in which a facility is ramping up to full production capacity due to underutilization of the facility. Manufacturing overhead at each of our facilities includes virtually all indirect costs (including share-based compensation costs) incurred at the plants, including engineering, finance, information technology, human resources and plant management.

General and Administrative Expenses

General and administrative expenses are primarily incurred at our corporate headquarters and our research facilities and include salaries, benefits and other personnel related costs for employees engaged in research and development, engineering, finance, internal audit, information technology, human resources, business development, global operational excellence, global supply chain, in-house legal and executive management. Other costs include outside legal and accounting fees, risk management (insurance), share-based compensation and certain other administrative and global resources costs. In addition, realized losses on the sale of receivables under supply chain financing arrangements with our customers and realized gains and losses on the sale of other assets at our manufacturing facilities are also included in general and administrative expenses.

The research and development expenses incurred at our Warren, Rhode Island and Fall River, Massachusetts locations as well as at our Kolding, Denmark advanced engineering center are also included in general and administrative expenses. For the three months ended March 31, 2019 and 2018, research and development expenses each totaled \$0.2 million.

For the three months ended March 31, 2019, the realized losses on the sale of certain receivables, on a non-recourse basis under supply chain financing arrangements with our customers, to financial institutions and the realized losses on the sale of other assets at our manufacturing facilities totaled \$2.2 million. There were no such amounts for the three months ended March 31, 2018.

Other Income (Expense)

Other income (expense) consists primarily of interest expense on our debt borrowings and the amortization of deferred financing costs on such borrowings. Other income (expense) also includes realized gains and losses on foreign currency remeasurement, interest income, losses on extinguishment of debt and miscellaneous income and expense.

Income Taxes

Income taxes consist of federal, state, provincial, local and foreign taxes based on income in jurisdictions in which we operate, including in the U.S., China, Mexico, Turkey and India. The composite income tax rate, tax provisions, deferred tax assets and liabilities vary according to the jurisdiction in which the income or loss arises. Tax laws are complex and subject to different interpretations by management and the respective governmental taxing authorities, and require us to exercise judgment in determining our income tax provision, our deferred tax assets and liabilities and the valuation allowance recorded against our net deferred tax assets.

KEY FINANCIAL METRICS

In addition to measures of financial performance presented in our condensed consolidated financial statements in accordance with GAAP, we use certain other financial measures and operating metrics to analyze our performance. These “non-GAAP” financial measures consist of total billings, EBITDA, adjusted EBITDA, free cash flow and net cash (debt), which help us evaluate growth trends, establish budgets, assess operational efficiencies, oversee our overall liquidity, and evaluate our overall financial performance. The key operating metrics consist of wind blade sets invoiced, estimated megawatts of energy capacity for wind blade sets invoiced, manufacturing lines dedicated to customers under long-term supply agreements, total manufacturing lines installed, manufacturing lines in startup and manufacturing lines in transition, which help us evaluate our operational performance. We believe that these measures are useful to investors in evaluating our performance.

	Three Months Ended	
	March 31,	
	2019	2018
	(in thousands)	
Net sales	\$ 299,780	\$ 253,981
Total billings (1)	\$ 279,471	\$ 223,701
Net income (loss)	\$ (12,104)	\$ 8,648
EBITDA (1)	\$ (4,097)	\$ 20,974
Adjusted EBITDA (1)	\$ 2,925	\$ 27,373
Capital expenditures	\$ 18,709	\$ 11,714
Free cash flow (1)	\$ (30,800)	\$ (14,746)

	March 31, 2019	December 31, 2018
	(in thousands)	
Total debt, net of debt issuance costs	\$ 159,438	\$ 137,623
Net debt (1)	\$ (81,946)	\$ (53,155)

- (1) See below for more information and a reconciliation of total billings, EBITDA, adjusted EBITDA, free cash flow and net debt to net sales, net income (loss), net income (loss), net cash used in operating activities and total debt, net of debt issuance costs, respectively, the most directly comparable financial measures calculated and presented in accordance with GAAP.

Total billings

We define total billings, a non-GAAP financial measure, as the total amounts we have invoiced our customers for products and services for which we are entitled to payment under the terms of our long-term supply agreements or other contractual agreements. We monitor total billings, and believe it is useful to present to investors as a supplement to our GAAP measures, because we believe it more directly correlates to sales activity and operations based on the timing of actual transactions with our customers, which facilitates comparison of our performance between periods and provides a more timely indication of trends in sales. Under GAAP, total net sales recognized on products in production represents the total amount that we have recognized as revenue under the cost-to-cost method for services performed during the period under our long-term supply agreements. Under our long-term supply agreements with our customers, we invoice our customers for wind blades once the blades pass certain acceptance procedures and title passes to our customers. Our customers generally pay us for the wind blades between 15 to 90 days after receipt of the invoice based on negotiated payment terms.

EBITDA and Adjusted EBITDA

We define EBITDA, a non-GAAP financial measure, as net income or loss plus interest expense (including losses on extinguishment of debt and net of interest income), income taxes and depreciation and amortization. We define adjusted EBITDA as EBITDA plus any share-based compensation expense, plus or minus any realized gains or losses from foreign currency remeasurement, plus or minus any gains or losses from the sale of assets. Adjusted EBITDA is the primary metric used by our management and our board of directors to establish budgets and operational goals for managing our business and evaluating our performance. In addition, our new credit agreement (the Credit Agreement) that we entered into in April 2018 contains minimum EBITDA (as defined in the Credit Agreement) covenants with which we must comply. We monitor adjusted EBITDA as a supplement to our GAAP measures, and believe it is useful to present to investors, because we believe that it facilitates evaluation of our period-to-period operating performance by eliminating items that are not operational in nature, allowing comparison of our recurring core business operating results over multiple periods unaffected by differences in capital structure, capital investment cycles and fixed asset base. In addition, we believe adjusted EBITDA and similar measures are widely used by investors, securities analysts, ratings agencies, and other parties in evaluating companies in our industry as a measure of financial performance and debt-service capabilities.

Our use of EBITDA and adjusted EBITDA have limitations as analytical tools, and you should not consider them in isolation or as substitutes for analysis of our results as reported under GAAP.

In evaluating EBITDA and adjusted EBITDA, you should be aware that in the future, we will incur expenses similar to the adjustments noted herein. Our presentations of EBITDA and adjusted EBITDA should not be construed as suggesting that our future results will be unaffected by these expenses or any unusual or non-recurring items. When evaluating our performance, you should consider EBITDA and adjusted EBITDA alongside other financial performance measures, including our net income (loss) and other GAAP measures.

Free cash flow

We define free cash flow as net cash provided by operating activities less capital expenditures. We believe free cash flow is a useful measure for investors because it portrays our ability to generate cash from our business for purposes such as repaying maturing debt and funding business acquisitions.

Net cash (debt)

We define net cash (debt) as total unrestricted cash and cash equivalents less the total principal amount of debt outstanding. The total principal amount of debt outstanding is comprised of the long-term debt and current maturities of long-term debt as presented in our

condensed consolidated balance sheets adding back any debt issuance costs and discounts. We believe that the presentation of net cash (debt) provides useful information to investors because our management reviews net cash (debt) as part of our oversight of overall liquidity, financial flexibility and leverage. Net cash (debt) is important when we consider opening new plants and expanding existing plants, as well as for capital expenditure requirements.

The following tables reconcile our non-GAAP key financial measures to the most directly comparable GAAP measures:

Total billings, EBITDA and adjusted EBITDA are reconciled as follows:

	Three Months Ended March 31,	
	2019	2018
	(in thousands)	
Net sales	\$ 299,780	\$ 253,981
Change in gross contract assets	(17,056)	(24,396)
Foreign exchange impact ⁽¹⁾	(3,253)	(5,884)
Total billings	<u>\$ 279,471</u>	<u>\$ 223,701</u>
Net income (loss)	\$ (12,104)	\$ 8,648
Adjustments:		
Depreciation and amortization	10,659	7,072
Interest expense (net of interest income)	1,948	3,297
Income tax provision (benefit)	(4,600)	1,957
EBITDA	(4,097)	20,974
Share-based compensation expense	985	2,388
Realized loss on foreign currency remeasurement	3,802	4,011
Realized loss on sale of assets	2,235	—
Adjusted EBITDA	<u>\$ 2,925</u>	<u>\$ 27,373</u>

- (1) Represents the effect of the difference in the exchange rates used by our various foreign subsidiaries when converted to U.S. dollars on the net sales and contract assets as of period-end.

Free cash flow is reconciled as follows:

	Three Months Ended March 31,	
	2019	2018
	(in thousands)	
Net cash used in operating activities	\$ (12,091)	\$ (3,032)
Less capital expenditures	(18,709)	(11,714)
Free cash flow	<u>\$ (30,800)</u>	<u>\$ (14,746)</u>

Net debt is reconciled as follows:

	March 31,	December 31,
	2019	2018
	(in thousands)	
Cash and cash equivalents	\$ 78,319	\$ 85,346
Less total debt, net of debt issuance costs	(159,438)	(137,623)
Less debt issuance costs	(827)	(878)
Net debt	<u>\$ (81,946)</u>	<u>\$ (53,155)</u>

KEY OPERATING METRICS

	Three Months Ended	
	March 31,	
	2019	2018
Sets	662	569
Estimated megawatts	1,861	1,464
Utilization	64%	71%
Dedicated manufacturing lines	54	46
Manufacturing lines installed	49	38
Manufacturing lines in operation	31	24
Manufacturing lines in startup	13	10
Manufacturing lines in transition	5	4

Key operating metrics consist of sets invoiced, estimated megawatts of energy capacity for wind blade sets invoiced, utilization, dedicated manufacturing lines, manufacturing lines installed, manufacturing lines in operation, manufacturing lines in startup and manufacturing lines in transition.

Sets represents the number of wind blade sets, consisting of three wind blades each, which we invoiced worldwide during the period. We monitor sets and believe that presenting sets to investors is helpful because we believe that it is the most direct measurement of our manufacturing output during the period. Sets primarily impact net sales and total billings.

Estimated megawatts are the energy capacity to be generated by wind blade sets invoiced in the period. Our estimate is based solely on name-plate capacity of the wind turbine on which the wind blades we manufacture are expected to be installed. We monitor estimated megawatts and believe that presenting estimated megawatts to investors is helpful because we believe that it is a commonly followed measurement of energy capacity across our industry and provides an indication of our share of the overall wind blade market.

Utilization represents the percentage of the number of wind blades invoiced during the period compared to the total potential wind blade capacity of manufacturing lines installed during the period.

Dedicated manufacturing lines are the number of wind blade manufacturing lines that we have dedicated to our customers pursuant to our long-term supply agreements at the end of the period. We monitor dedicated manufacturing lines and believe that presenting this metric to investors is helpful because we believe that the number of dedicated manufacturing lines is the best indicator of demand for the wind blades we manufacture for customers under our long-term supply agreements in any given period. We believe that dedicated manufacturing lines provide an understanding of additional capacity within an existing facility. Dedicated manufacturing lines primarily impacts our net sales and total billings.

Manufacturing lines installed represents the number of wind blade manufacturing lines installed and either in operation, startup or transition at the end of the period. We believe that total manufacturing lines installed provides an understanding of the number of manufacturing lines installed and either in operation, startup or transition.

Manufacturing lines in operation represents the number of wind blade manufacturing lines installed less the number of manufacturing lines in startup and in transition.

Manufacturing lines in startup is the number of wind blade manufacturing lines that were in a startup phase during the pre-production and production ramp up period, pursuant to the opening of a new manufacturing facility, the expansion of an existing manufacturing facility or the addition of new manufacturing lines in an existing manufacturing facility. We monitor and present this metric because we believe it helps investors to better understand the impact of the startup phase of our new manufacturing facilities on our gross profit and net income.

Manufacturing lines in transition is the number of wind blade manufacturing lines that were being transitioned to a new wind blade model during the period. We monitor and present this metric because we believe it helps investors to better understand the impact of these transitions on our gross profit and net income.

Results of Operations

Three Months Ended March 31, 2019 Compared to Three Months Ended March 31, 2018

The following table summarizes certain information relating to our operating results and related percentage of net sales for the three months ended March 31, 2019 and 2018 that has been derived from our unaudited condensed consolidated financial statements.

	Three Months Ended March 31,			
	2019		2018	
	(dollars in thousands)			
Net sales	\$ 299,780	100.0%	\$ 253,981	100.0%
Cost of sales	283,038	94.4	210,988	83.1
Startup and transition costs	18,178	6.1	14,735	5.8
Total cost of goods sold	301,216	100.5	225,723	88.9
Gross profit (loss)	(1,436)	(0.5)	28,258	11.1
General and administrative expenses	10,220	3.4	11,163	4.4
Income (loss) from operations	(11,656)	(3.9)	17,095	6.7
Other expense	(5,048)	(1.6)	(6,490)	(2.5)
Income (loss) before income taxes	(16,704)	(5.5)	10,605	4.2
Income tax benefit (provision)	4,600	1.5	(1,957)	(0.8)
Net income (loss)	\$ (12,104)	(4.0)%	\$ 8,648	3.4%

Net sales for the three months ended March 31, 2019 increased by \$45.8 million or 18.0% to \$299.8 million compared to \$254.0 million in the same period in 2018. Net sales of wind blades increased by 18.3% to \$277.0 million for the three months ended March 31, 2019 as compared to \$234.2 million in the same period in 2018. The increase was primarily driven by a 15% increase in the number of wind blades produced during the three months ended March 31, 2019 compared to the same period in 2018 largely as a result of increased production at our Turkey and Mexico operations. This increase was also due to a higher average sales price due to the mix of wind blade models produced during the three months ended March 31, 2019 compared to the same period in 2018. These increases were partially offset by incremental adjustments recorded in the three months ended March 31, 2019 as compared to the same period in 2018 under ASC 606 based upon changes in estimates of future revenue, cost of sales and operating income, as well as reductions of revenue based upon the insolvency of Senvion and foreign currency fluctuations. Net sales from the manufacturing of precision molding and assembly systems during the three months ended March 31, 2019 were \$11.2 million as compared to \$10.8 million in the same period in 2018. Additionally, there was a \$2.6 million increase in transportation and other sales during the three months ended March 31, 2019 as compared to the same period in 2018. Total billings for the three months ended March 31, 2019 increased by \$55.8 million or 24.9% to \$279.5 million compared to \$223.7 million in the 2018 period. The impact of the fluctuating U.S. dollar against the Euro in our Turkey operations and the Chinese Renminbi in our China operations on consolidated net sales and total billings for the three months ended March 31, 2019 was a net decrease of 3.3% and 3.5%, respectively, as compared to 2018.

Total cost of goods sold for the three months ended March 31, 2019 was \$301.2 million and included \$16.1 million related to 13 lines in startup in our plants in Mexico, Iowa and China and the startup of new wind blade models for a customer in Turkey and \$2.1 million of transition costs related to five lines in transition during the quarter. This compares to total cost of goods sold for the three months ended March 31, 2018 of \$225.7 million and included \$14.7 million related to startup costs in our new plants in Turkey and Mexico, a new customer in China and no transition costs. Cost of goods sold as a percentage of net sales increased by approximately 12 percentage points during the three months ended March 31, 2019 as compared to the same period in 2018, driven primarily by a significant increase in underutilized labor in Matamoros, Mexico which contributed to higher startup costs than planned and a charge for the liquidated damages that we are required to pay for lost or delayed production in Matamoros and a \$3.4 million increase in startup and transition costs. Furthermore, an extended startup of our Newton, Iowa transportation facility and the acceleration of depreciation on property, plant and equipment which was used to fulfill the Senvion contract contributed to the overall increase. These increased costs were partially offset by the impact of savings in raw material costs. The impact of the fluctuating U.S. dollar against the Euro, Turkish Lira, Chinese Renminbi and Mexican Peso decreased consolidated cost of goods sold by 6.4% for three months ended March 31, 2019 as compared to 2018.

General and administrative expenses for the three months ended March 31, 2019 totaled \$10.2 million, or \$8.0 million excluding the realized losses on the sales of certain receivables and other assets at our manufacturing facilities totaling \$2.2 million. This compares to \$11.2 million of general and administrative expenses for the same period in 2018. As a percentage of net sales, general and administrative expenses, excluding the realized losses on the sale of certain receivables and other assets, was 2.7% for the three months ended March 31, 2019, down from 4.4% in the same period in 2018. The decrease in expenses was primarily driven by lower incentive compensation and a reduction in the performance assumptions related to certain of our share-based plans.

Other expense totaled \$ 5.0 million for the three months ended March 31, 2019 as compared to \$ 6.5 million for the same period in 2018 . The decrease was primarily due to a \$1.3 million decrease in interest expense in the three months ended March 31, 2019 as compared to the same period in 2018 reflecting the April 2018 refinancing of our corporate debt and ensuing interest rate swap .

Income taxes reflected a benefit of \$4.6 million for the three months ended March 31, 2019 as compared to a provision of \$2.0 million for the same period in 2018. The decrease was primarily due to the pretax loss in the three months ended March 31, 2019 as compared to pretax income in the same period in 2018. Our annualized effective tax rate for the 2019 period is higher than in the comparable 2018 period due to losses not benefited in jurisdictions where a full valuation allowance is recorded.

Net loss for the three months ended March 31, 2019 was \$12.1 million as compared to net income of \$8.6 million in the same period in 2018. The decrease was primarily due to the Servion related reductions to revenues and the related accelerated depreciation charges, the impact of the Matamoros labor strike and the extended startup of our Newton, Iowa transportation facility as described above. The loss per share was \$0.35 for the three months ended March 31, 2019, compared to diluted earnings per share of \$0.24 for the three months ended March 31, 2018.

Segment Discussion

The following table summarizes our net sales and income (loss) from operations by our four geographic operating segments for the three months ended March 31, 2019 and 2018 that has been derived from our unaudited condensed consolidated financial statements.

	Three Months Ended March 31,	
	2019	2018
Net Sales	(in thousands)	
U.S.	\$ 41,628	\$ 46,124
Asia	68,718	77,670
Mexico	84,665	57,964
EMEA1	104,769	72,223
Total net sales	\$ 299,780	\$ 253,981

	Three Months Ended March 31,	
	2019	2018
Income (Loss) from Operations	(in thousands)	
U.S. (1)	\$ (14,503)	\$ (9,050)
Asia	(8,800)	6,417
Mexico	(424)	4,258
EMEA1	12,071	15,470
Total income (loss) from operations	\$ (11,656)	\$ 17,095

- (1) Includes the costs of our corporate headquarters and our advanced engineering center in Kolding, Denmark totaling \$8.0 million and \$11.2 million for the three months ended March 31, 2019 and 2018, respectively.

U.S. Segment

Net sales for the three months ended March 31, 2019 decreased by \$4.5 million or 9.7% to \$41.6 million compared to \$46.1 million in the same period in 2018. Net sales of wind blades decreased to \$31.9 million during the three months ended March 31, 2019 as compared to \$38.9 million in the same period of 2018. The decrease was primarily due to a 9% reduction in the number of wind blades produced in the three months ended March 31, 2019 as compared to the same period in 2018 because of wind blade model transitions and a decline in the average sales prices of the same wind blade models delivered in both periods as a result of savings in raw material costs, a portion of which we share with our customer. Net sales from the manufacturing of precision molding and assembly systems during the three months ended March 31, 2019 were \$0.2 million compared to \$1.9 million during the same period in 2018. Additionally, there was a \$4.3 million increase in transportation and other sales during the three months ended March 31, 2018 as compared to the same period in 2018.

The loss from operations for the three months ended March 31, 2019 was \$14.5 million as compared to a loss of \$9.1 million in the same period in 2018. These amounts include corporate general and administrative costs of \$8.0 million and \$11.2 million for the three months ended March 31, 2019 and 2018, respectively. The operating results were unfavorably impacted by the extended startup at our Newton, Iowa transportation facility and by the lower wind blade volume discussed above.

Asia Segment

Net sales for the three months ended March 31, 2019 decreased by \$9.0 million or 11.5% to \$68.7 million compared to \$77.7 million in the same period in 2018. Net sales of wind blades were \$62.1 million in the three months ended March 31, 2019 compared to \$68.2 million in the same period of 2018. This decrease was primarily due to a 10% decrease year over year in the number of wind blades produced driven changes in blade models in Dafeng, China and the reduced production in Taicang, China as a result of our customer entering into a provisional self-administration procedure concerning its assets as ordered by the Local Court of Hamburg, Germany pursuant to the Insolvency Act in Germany and the resulting ASC 606 revenue reductions. This decrease was partially offset by a higher average sales price due to the mix of wind blade models produced during the three months ended March 31, 2019 compared to the same period in 2018. Net sales from the manufacturing of precision molding and assembly systems totaled \$6.2 million during the three months ended March 31, 2019 compared to \$8.2 million during the same period in 2018. The impact of the fluctuating U.S. dollar against the Chinese Renminbi had an unfavorable impact of 2.9% on net sales during the three months ended March 31, 2019 as compared to the same period in 2018.

The loss from operations in the Asia segment for the three months ended March 31, 2019 was \$8.8 million as compared to income from operations of \$6.4 million in the same period in 2018. This decrease was driven by the insolvency of a customer as noted above and the resultant revenue reduction relating to our contract with that customer and the acceleration of depreciation on customer-specific property, plant and equipment in Taicang. This was partially offset by the fluctuating U.S. dollar against the Chinese Renminbi which had a favorable impact of 4.9% on cost of goods sold for the three months ended March 31, 2019 as compared to the 2018 period.

Mexico Segment

Net sales in the three months ended March 31, 2019 increased by \$26.7 million or 46.1% to \$84.7 million compared to \$58.0 million in the same period in 2018. The increase reflects a 24% net increase in overall wind blade volume driven by increases at two of the three plants in Juarez and a small amount of volume from our Matamoros plant, partially offset by a decrease in wind blade volume at one plant in Juarez as it transitions blade models. These increases were also impacted by an increase in the average sales price of wind blades due to a change in the mix of wind blades between the two periods. Net sales from the manufacturing of precision molding and assembly systems during the three months ended March 31, 2019 were \$4.8 million compared to \$0.8 million during the same period in 2018.

The loss from operations in the Mexico segment for the three months ended March 31, 2019 was \$0.4 million as compared to income from operations of \$4.3 million in the same period in 2018. The decrease was due primarily to a significant amount of underutilized labor in Matamoros due to the aforementioned strike and liquidated damage amounts that we are required to pay for lost production due to the Matamoros labor strike, partially offset by the overall increase in wind blade volume noted above as well as from savings in raw material costs. The fluctuating U.S. dollar relative to the Mexican Peso had a favorable impact of 0.5% on cost of goods sold for the three months ended March 31, 2019 as compared to 2018.

EMEA Segment

Net sales during the three months ended March 31, 2019 increased by \$32.5 million or 45.1% to \$104.8 million compared to \$72.2 million in the same period in 2018. The increase was driven by a 74% increase in wind blade volume at our two Turkey plants. This increase was partially offset by a decrease in the average sales price of wind blades delivered in the comparative periods. The fluctuating U.S. dollar relative to the Euro had an unfavorable impact of 7.6% on net sales during the three months ended March 31, 2019 as compared to 2018.

Income from operations in the EMEA segment for the three months ended March 31, 2019 was \$12.1 million as compared to \$15.5 million in the same period in 2018. The decrease was primarily driven by higher material costs related to a new product at our second Turkey plant, partially offset by the increased wind blade production at our two Turkey plants, lower startup costs and the favorable impact on cost of goods sold of the fluctuation of the U.S. dollar relative to the Turkish Lira and Euro of 16.2% for the three months ended March 31, 2019 as compared to 2018.

Liquidity and Capital Resources

Our primary needs for liquidity have been, and in the future will continue to be, capital expenditures, new facility startup costs, the impact of transitions, working capital and debt service costs. Our capital expenditures have been primarily related to machinery and equipment for new facilities or facility expansions. Historically, we have funded our working capital needs through cash flows from operations, the proceeds received from our credit facilities and from proceeds received from the issuance of stock. We had net borrowings on financing arrangements of \$21.8 million for the three months ended March 31, 2019 as compared to net borrowings on financing arrangements of \$4.2 million in the comparable period of 2018. As of March 31, 2019 and December 31, 2018, we had \$160.3 million and \$138.5 million in outstanding indebtedness, excluding debt issuance costs, respectively. As of March 31, 2019,

primarily as a result of the April 2018 refinancing of our prior senior secured credit facility, we had an aggregate of \$73.0 million of remaining capacity and \$73.0 million of remaining availability under our various credit facilities. Working capital requirements have increased as a result of our overall growth and the need to fund higher accounts receivable and inventory levels as our business volumes have increased as well as the increased level of transitions. Based upon current and anticipated levels of operations, we believe that cash on hand, available credit facilities and cash flow from operations will be adequate to fund our working capital and capital expenditure requirements and to make required payments of principal and interest on our indebtedness over the next twelve months.

We anticipate that any new facilities and future facility expansions will be funded through cash flows from operations, the incurrence of other indebtedness and other potential sources of liquidity. At March 31, 2019 and December 31, 2018, we had unrestricted cash, cash equivalents and short-term investments totaling \$78.3 million and \$85.3 million, respectively. The March 31, 2019 balance includes \$37.9 million of cash located outside of the United States, including \$20.9 million in China, \$12.0 million in Turkey, \$3.2 million in India and \$1.8 million in Mexico. Our ability to repatriate funds from China to the United States is subject to a number of restrictions imposed by the Chinese government. We repatriate funds through several technology license and corporate/administrative service agreements. We are compensated quarterly based on agreed upon royalty rates for such intellectual property licenses and quarterly fees for those services. Certain of our subsidiaries are limited in their ability to declare dividends without first meeting statutory restrictions of the People's Republic of China, including retained earnings as determined under Chinese-statutory accounting requirements. Until 50% (\$21.6 million as of December 31, 2018) of registered capital is contributed to a surplus reserve, our Chinese operations can only pay dividends equal to 90% of after-tax profits (10% must be contributed to the surplus reserve). Once the surplus reserve fund requirement is met, our Chinese operations can pay dividends equal to 100% of after-tax profit assuming other conditions are met. At December 31, 2018, the amount of the surplus reserve fund was \$6.5 million.

Operating Cash Flows

	Three Months Ended March 31,	
	2019	2018
	(in thousands)	
Net income (loss)	\$ (12,104)	\$ 8,648
Depreciation and amortization	10,659	7,072
Share-based compensation expense	985	2,388
Loss on sale of assets	2,235	—
Other non-cash items	51	181
Changes in assets and liabilities	(13,917)	(21,321)
Net cash used in operating activities	<u>\$ (12,091)</u>	<u>\$ (3,032)</u>

Net cash used in operating activities totaled \$12.1 million for the three months ended March 31, 2019 and was primarily the result of a \$13.9 million net decrease in assets and liabilities and a \$12.1 million net loss, partially offset by \$10.7 million of depreciation and amortization, \$2.2 million loss on sale of assets and \$1.0 million of share-based compensation expense. The key components of the net decrease in assets and liabilities include a \$17.2 million increase in prepaid expenses and other current assets, a \$15.9 million increase in contract assets and liabilities and a \$14.1 million increase in other noncurrent assets. These decreases were partially offset by a \$17.8 million increase in accounts payable and accrued expenses, an \$8.5 million decrease in accounts receivable, a \$4.2 million decrease in operating lease right of use assets and operating lease liabilities and a \$2.8 million increase in accrued warranty. The changes in contract assets and liabilities, accounts receivable, accounts payable and accrued expenses and accrued warranty are primarily the result of the timing of production in the period.

Net cash used in operating activities totaled \$3.0 million for the three months ended March 31, 2018 and was primarily the result of a \$21.3 million net decrease in assets and liabilities, partially offset by net income for the period of \$8.6 million, depreciation and amortization of \$7.1 million and share-based compensation expense of \$2.4 million. The key components of the \$21.3 million net decrease in assets and liabilities include a \$22.7 million increase in contract assets and liabilities and an \$8.2 million increase in prepaid expenses and other current assets. These decreases were partially offset by a \$3.6 million decrease in accounts receivable, a \$3.2 million increase in accounts payable and accrued expenses and a \$2.3 million increase in accrued warranty. The changes in contract assets and liabilities, accounts receivable, accounts payable and accrued expenses and accrued warranty are primarily the result of the timing of production in the period.

Investing Cash Flows

	Three Months Ended	
	March 31,	
	2019	2018
	(in thousands)	
Purchase of property and equipment	\$ (18,709)	\$ (11,714)
Net cash used in investing activities	\$ (18,709)	\$ (11,714)

Net cash used in investing activities totaled \$18.7 million and \$11.7 million for the three months ended March 31, 2019 and 2018, respectively, driven primarily by capital expenditures for new facilities and expansion or improvements at existing facilities. The capital expenditures for the three months ended March 31, 2019 primarily related to our new manufacturing facility in Yangzhou, China, our second manufacturing facility in Turkey, our new tooling facility and the expansion of one of our blade manufacturing facilities in Juárez, Mexico and continued investments in our other existing facilities. The capital expenditures for the three months ended March 31, 2018 primarily related to the our second manufacturing facility in Turkey, the expansion and improvements at our Taicang, China facility and costs at our corporate office to enhance our information technology systems.

We anticipate fiscal year 2019 capital expenditures of between \$95 million to \$100 million and we estimate that the cost that we will incur after March 31, 2019 to complete our current projects in process will be approximately \$20.6 million. We have used, and will continue to use, cash flows from operations, the proceeds received from our credit facilities and the proceeds received from the issuance of stock for major projects currently being undertaken, which include new manufacturing facilities in Chennai, India, Yangzhou, China and our tooling facility in Juárez, Mexico and the continued investment in our existing China, Mexico and Turkey wind blade facilities and costs to enhance our information technology systems.

Financing Cash Flows

	Three Months Ended	
	March 31,	
	2019	2018
	(in thousands)	
Proceeds from revolving loans	6,000	—
Repayments of term and revolving loans	—	(938)
Net proceeds from accounts receivable financing	13,208	8,093
Proceeds from working capital loans	2,228	—
Principal repayments of finance leases	(2,929)	—
Net repayments of other debt	(1,445)	(2,978)
Proceeds from exercise of stock options	4,572	585
Repurchase of common stock including shares withheld in lieu of income taxes	(559)	(272)
Net cash provided by financing activities	\$ 21,075	\$ 4,490

The net cash provided by financing activities totaled \$21.1 million for the three months ended March 31, 2019 compared to \$4.5 million of net cash provided by financing activities in the comparable period of 2018. Net cash provided by financing activities for the three months ended March 31, 2019 primarily reflects the net proceeds from accounts receivable financing and revolving loans, proceeds from the exercise of stock options and proceeds from working capital loans, partially offset by principal repayments of finance leases and other debt. Net cash provided by financing activities for the three months ended March 31, 2018 primarily reflects the net proceeds from accounts receivable financing, partially offset by net repayments of other debt and term loans.

Share Repurchases

During the three months ended March 31, 2019, we repurchased 18,917 shares of our common stock for \$0.6 million related to tax withholding requirements on restricted stock units which vested during the period.

Description of Our Indebtedness

Senior Financing Agreements (U.S.):

In December 2017, we amended our previous credit facility (the Credit Facility) to consent to the restructuring of our parent and subsidiaries, decreased the variable interest rate to LIBOR, with a 1.0% floor, plus 5.25% and the amendment of certain capital expenditure and other financial covenants. In connection with this amendment, the amendment fee of \$0.4 million was recorded as a debt issuance cost and was being amortized to interest expense over the remaining term of the Credit Facility (36 months) using the effective interest method. As of December 31, 2017, the aggregate outstanding balance under the Credit Facility was \$74.1 million.

In April 2018, we entered into a new credit agreement (the Credit Agreement) with four lenders consisting of a multi-currency, revolving credit facility in an aggregate principal amount of \$150.0 million, including a \$25.0 million letter of credit sub-facility. On the closing date we drew down \$75.4 million on the revolving credit facility in connection with the closing of the transactions contemplated by the Credit Agreement and used the proceeds to pay all outstanding amounts due and payable under the Credit Facility, various fees and expenses and accrued interest. All borrowings and amounts outstanding under the Credit Agreement are scheduled to mature in April 2023.

In connection with the Credit Agreement, in the second quarter of 2018 we expensed \$2.0 million of deferred financing costs associated with the Credit Facility and a \$1.4 million prepayment penalty within the caption "Loss on extinguishment of debt" in the condensed consolidated income statements. In addition, we incurred debt issuance costs related to the Credit Agreement totaling \$1.0 million which will be amortized to interest expense over the five-year term of the Credit Agreement using the effective interest method.

Interest accrues at a variable rate equal to LIBOR plus an initial margin of 1.5% (4.0% as of March 31, 2019), which may vary based on our total net leverage ratio as defined in the Credit Agreement. Interest is paid monthly and we are not obligated to make any principal repayments prior to the maturity date provided we are not in default under the Credit Agreement. We may prepay the borrowings under the Credit Agreement without penalty.

In April 2018, we also entered into an interest rate swap arrangement to fix a notional amount of \$75.0 million of the Credit Agreement at an effective interest rate of 4.2% for a period of five years. As of March 31, 2019 and December 31, 2018, there was \$96.4 million and \$90.4 million outstanding under the Credit Agreement, respectively.

Due to the revolving credit facility's variable interest rate of LIBOR plus a competitive spread, we estimate that fair-value approximates the face value of these notes.

Accounts Receivable, Secured and Unsecured Financing:

EMEA1: During 2014, we renewed a general credit agreement, as amended, with a financial institution in Turkey to provide up to 21.0 million Euro of short-term collateralized financing on invoiced accounts receivable of one of our customers in Turkey. Interest accrues annually at a fixed rate of 9.1% and is paid quarterly. In December 2014, and later amended, we obtained an additional \$5.0 million of unsecured financing in Turkey under the credit agreement, increasing the total facility. All credit agreement terms remained the same. The credit agreement does not have a maturity date, however the limits are reviewed in September of each year. During the fourth quarter of 2018, we replaced the accounts receivable financing facility with the accounts receivable assignment agreement discussed below. As of March 31, 2019 and December 31, 2018, there were no amounts outstanding under the unsecured financing facility.

In 2014, we entered into a credit agreement with a Turkish financial institution to provide up to \$16.0 million of short-term financing of which \$10.0 million is collateralized financing on invoiced accounts receivable of one of our customers in Turkey, \$5.0 million is unsecured financing and \$1.0 million is related to letters of guarantee. Interest accrues at a variable rate of the three month Euro Interbank Offered Rate (EURIBOR) plus 6.5%. During the first quarter of 2018, the collateralized financing on invoiced accounts receivables and unsecured financing facilities were retired and the letters of guarantee limit was adjusted, later amended to 1.4 million Euro (approximately \$1.6 million as of March 31, 2019). No amounts were outstanding under this agreement as of March 31, 2019 and December 31, 2018.

In 2016, we entered into a general credit agreement, as amended, with a Turkish financial institution to provide up to 39.0 million Euro (approximately \$43.7 million as of March 31, 2019) of short-term financing of which 28.0 million Euro (approximately \$31.4 million as of March 31, 2019) is collateralized financing based on invoiced accounts receivables of two of our customers in Turkey, 10.0 million Euro (approximately \$11.2 million as of March 31, 2019) for the collateralized financing of capital expenditures and 1.0 million Euro (approximately \$1.1 million as of March 31, 2019) related to letters of guarantee. Interest on the collateralized financing based on invoiced accounts receivables of two of our customers in Turkey accrues at a fixed rate of 7.5% as of March 31,

2019 and is paid quarterly with a maturity date equal to four months from the applicable invoice date. Interest on the collateralized capital expenditures financing accrues at the one month EURIBOR plus 6.75% (6.75% as of March 31, 2019) with monthly principal repayments beginning in October 2017 with a final maturity date of December 2021. Interest on the letters of guarantee accrues at 2.00% annually with an amended final maturity date of July 2020 . As of March 31, 2019 and December 31, 2018 , there was \$1 0 . 9 million and \$1 2 . 2 million outstanding under the collateralized financing of capital expenditures line, respectively. Additionally, as of March 31, 2019 and December 31, 2018 , there was \$ 22 . 0 million and \$ 14 . 5 million, respectively, outstanding under the collateralized financing based on invoiced accounts receivables.

In the fourth quarter of 2018, we entered into a credit agreement with a Turkish financial institution to provide up to 100 million Turkish Lira (approximately \$17.8 million as of March 31, 2019) of collateralized financing on invoiced accounts receivable of one of our customers in Turkey. Interest accrues at a fixed rate of 3.9% and is paid quarterly. The credit agreement does not have a maturity date, however the limit will be reviewed in October of each year. As of March 31, 2019, there was \$5.7 million outstanding under this agreement. No amounts were outstanding under this agreement as of December 31, 2018.

Due to the short-term nature of the unsecured financings in the EMEAI segment, we estimate that fair-value approximates the face value of the notes.

Asia : In February 2017, we entered into a credit agreement, as amended, with a Chinese financial institution to provide an unsecured credit line of up to 210.0 million Renminbi (approximately \$31.2 million as of March 31, 2019) which can be used for the purpose of domestic and foreign currency loans, issuing customs letters of guarantee or other transactions approved by the lender. Interest on the credit line accrues at the Chinese central bank interest rate plus an applicable margin (4.8% as of March 31, 2019) and can be paid monthly, quarterly or at the time of the debt's maturity (extended to January 2020). As of March 31, 2019 and December 31, 2018, there were 71.4 million Renminbi (approximately \$10.6 million) and 92.8 million Renminbi (approximately \$13.5 million) of letters of guarantee used for customs clearance outstanding, respectively. As of March 31, 2019, there was 15.0 million Renminbi (approximately \$2.2 million) of working capital loans outstanding. As of December 31, 2018, there were no working capital loan amounts outstanding.

In March 2018, we entered into a credit agreement with a Chinese financial institution to provide an unsecured credit line of up to 100.0 million Renminbi (approximately \$14.9 million as of March 31, 2019) of which 70.0 million Renminbi (approximately \$10.4 million as of March 31, 2019) can be used as customs letters of guarantee and 30.0 million Renminbi (approximately \$4.5 million as of December 31, 2018) can be used for working capital. Interest on the credit line accrues at the Chinese central bank interest rate plus an applicable margin (4.8% at March 31, 2019) and can be paid monthly, quarterly or at the time of the debt's maturity (in March 2023). As of March 31, 2019, there were 31.4 million Renminbi (approximately \$4.7 million) of letters of guarantee used for customs clearance outstanding. As of December 31, 2018, there were no amounts outstanding under this credit agreement.

Equipment Leases and Other Arrangements: We have entered into certain finance lease, sale-leaseback and equipment financing arrangements in the U.S., Mexico and EMEAI for equipment used in our operations as well as for office use. These leases bear interest at rates ranging from 3.0% to 9.0% annually, and principal and interest are payable monthly. As of March 31, 2019 and December 31, 2018, there was an aggregate total of \$23.0 million and \$21.4 million outstanding under these arrangements, respectively.

Operating Leases: We lease various facilities and equipment under non-cancelable operating lease agreements. As of March 31, 2019, we leased a total of approximately 6.2 million square feet in Dafeng, China; Taicang City, China; Yangzhou, China; Chennai, India; Izmir, Turkey; Kolding, Denmark; Newton, Iowa; Juárez, Mexico; Matamoros, Mexico; Santa Teresa, New Mexico; Warren, Rhode Island; Fall River, Massachusetts, as well as our corporate office in Scottsdale, Arizona. The terms of these leases range from 12 months to 120 months with annual payments approximating \$28 million for the full year 2019.

Off-Balance Sheet Transactions

We are not presently involved in any off-balance sheet arrangements, including transactions with unconsolidated special-purpose or other entities that would materially affect our financial position, results of operations, liquidity or capital resources, other than our operating lease arrangements and the accounts receivable assignment agreements described below. Furthermore, we do not have any relationships with special-purpose or other entities that provide off-balance sheet financing; liquidity, market risk or credit risk support; or engage in leasing or other services that may expose us to liability or risks of loss that are not reflected in condensed consolidated financial statements and related notes.

Our Mexico segment has an existing accounts receivable assignment agreement with a financial institution under which the financial institution buys, on a non-recourse basis, the accounts receivable amounts related to one of our Mexico segment's customers at a discount calculated based on an effective annual rate of LIBOR plus 2.75%.

In September 2018, our U.S. and Mexico segments entered into an accounts receivable assignment agreement with a financial institution. Under this agreement, the financial institution buys, on a non-recourse basis, the accounts receivable amounts related to one of our U.S. (Iowa location) and Mexico segment's customers at a discount calculated based on LIBOR plus 0.5%.

In the fourth quarter of 2018, our EMEAI segment entered into an accounts receivable assignment agreement with a financial institution. Under this agreement, the financial institution may buy, on a non-recourse basis, up to 15.0 million Euro (approximately \$16.8 million as of March 31, 2019) of the accounts receivable amounts related to one of our EMEAI segment's customers at a discount calculated based on EURIBOR plus 2.65%.

In the fourth quarter of 2018, our EMEAI segment entered into an accounts receivable assignment agreement with a financial institution. Under this agreement, the financial institution buys, on a non-recourse basis, the accounts receivable amounts related to one of our EMEAI segment's customers at a discount calculated based on EURIBOR plus 0.75%.

As the receivables are purchased by the financial institutions under the agreements as described in the preceding paragraphs, the receivables were removed from our balance sheet. During the three months ended March 31, 2019, \$132.5 million of receivables were sold under the accounts receivable assignment agreements described above.

Critical Accounting Policies and Estimates

There have been no other significant changes to our critical accounting policies as disclosed in our Annual Report on Form 10-K.

Recent Accounting Pronouncements

For a discussion of recent accounting pronouncements, see Note 1, *Recently Issued Accounting Pronouncements* to our condensed consolidated financial statements.

Contractual Obligations

During the three months ended March 31, 2019, there have been no material changes to the contractual obligations reported in our Annual Report on Form 10-K, other than in the ordinary course of business.

Item 3. *Quantitative and Qualitative Disclosures about Market Risk*

We are exposed to market risk in the ordinary course of our business. These market risks are principally limited to changes in foreign currency exchange rates and commodity prices. We currently do not hedge our exposure to these risks.

Foreign Currency Risk. We conduct international operations in China, Mexico and Turkey. Our results of operations are subject to both currency transaction risk and currency translation risk. We incur currency transaction risk whenever we enter into either a purchase or sale transaction using a currency other than the local currency of the transacting entity. With respect to currency translation risk, our financial condition and results of operations are measured and recorded in the relevant domestic currency and then translated into U.S. dollars for inclusion in our condensed consolidated financial statements. In recent years, exchange rates between these foreign currencies and the U.S. dollar have fluctuated significantly and may do so in the future. A hypothetical change of 10% in the exchange rates for the countries above would have resulted in a change to income from operations of approximately \$5.3 million and \$4.4 million for the three months ended March 31, 2019 and 2018, respectively.

Commodity Price Risk. We are subject to commodity price risk under agreements for the supply of our raw materials. We have not hedged, nor do we intend to hedge, our commodity price exposure. We generally lock in pricing for our key raw materials for 12 months which protects us from price increases within that period. As many of our raw material supply agreements have meet or release clauses, if raw materials prices go down, we are able to benefit from the reductions in price. We believe that this adequately protects us from increases in raw material prices and also enables us to take full advantage of decreases.

Resin and resin systems are the only commodities for which we do not have fixed pricing. Approximately 30% of the resin and resin systems we use is purchased under contracts controlled by two of our customers and therefore they receive/bear 100% of any increase or decrease in resin costs further limiting our exposure to price fluctuations. We believe that a 10% change in the price of resin and resin systems for the customers in which we are exposed to fluctuating prices would have had an impact to income from operations of approximately \$1.8 million and \$1.4 million for the three months ended March 31, 2019 and 2018, respectively. Furthermore, this amount does not include the portion of any increase or decrease that would be shared with our customers under our long-term supply agreements, which is generally 70%.

Interest Rate Risk. As of March 31, 2019, our EMEAI segment has one general credit agreement with a Turkish financial institution which is tied to EURIBOR. This agreement had collateralized financing of capital expenditures outstanding as of March 31, 2019 of

\$10.9 million. In addition, as of March 31, 2019, our Credit Agreement includes interest on the unhedged principal amount of \$21.4 million which is tied to LIBOR. Also, as of March 31, 2019, our Asia segment has one credit agreement with a Chinese financial institution which is tied to the Chinese central bank interest rate. This agreement had working capital loans outstanding totaling \$2.2 million. The EMEA I and Asia credit agreements and our Credit Agreement noted above are the only variable rate debt that we had outstanding as of March 31, 2019 as all remaining working capital loans, accounts receivable financing and capital lease obligations are fixed rate instruments and are not subject to fluctuations in interest rates. Due to the relatively low LIBOR and EURIBOR rates in effect as of March 31, 2019, a 10% change in the LIBOR or EURIBOR rate would not have had a material impact on our future earnings, fair values or cash flows.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed in our reports under the Exchange Act is recorded, processed, summarized, and reported within the time period specified in the SEC's rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

As required by Rule 13a-15(b) promulgated under the Exchange Act, our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the design and operating effectiveness as of March 31, 2019 of our disclosure controls and procedures, as defined in Rule 13a-15(e) promulgated under the Exchange Act. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of March 31, 2019.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the three months ended March 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we may be involved in disputes or litigation relating to claims arising out of our operations.

In March 2015, a complaint was filed against us in the Superior Court of the State of Arizona (Maricopa County) by a former employee, alleging that we had agreed to compensate the employee upon any future sale of the Company. We filed a motion to dismiss the complaint in April 2015, which was denied. We subsequently filed an answer to the complaint in July 2015 denying the substantive allegations of the complaint. The parties completed court-ordered mediation in December 2015 but were not able to reach a settlement. We filed a motion for summary judgment to dismiss the complaint in April 2016 and the court denied the motion in August 2016. The court has set a trial date for June 2019. We continue to deny the substantive allegations of the complaint and intend to vigorously defend this lawsuit; however, we are currently unable to determine the ultimate outcome of this case.

In June 2018, Iowa OSHA, a division of the Iowa Department of Labor, issued a citation and notification of penalty to us alleging that certain of our workplace practices and conditions at our Newton, Iowa wind blade manufacturing facility had violated the Iowa Occupational Safety and Health Act. Specifically, the citation cited us for multiple alleged violations and proposed that we pay an aggregate penalty of \$0.2 million. In June 2018, we notified Iowa OSHA that we were contesting all of the alleged violations and proposed penalties. In June 2018, the Labor Commissioner of the Iowa Department of Labor subsequently filed a complaint with the State of Iowa Employment Appeal Board, petitioning the appeal board to affirm the citation and notification of penalty that Iowa OSHA issued to us. In July 2018, we then filed a response with the appeal board denying the substantive allegations of the complaint. In March 2019, we entered into a settlement agreement with the Iowa Department of Labor pursuant to which we agreed to make a settlement payment of \$0.1 million and to implement certain safety enhancements at our Newton, Iowa manufacturing facility to fully resolve this matter.

From time to time, we are party to various lawsuits, claims, and other legal proceedings that arise in the ordinary course of business, some of which are covered by insurance. Upon resolution of any pending legal matters, we may incur charges in excess of presently established reserves. Our management does not believe that any such charges would, individually or in the aggregate, have a material adverse effect on our financial condition, results of operations or cash flows.

Item 1A. Risk Factors

There have been no material changes to the Risk Factors (Part I, Item 1A) in our Annual Report on Form 10-K, which could materially affect our business, financial condition, and/or future results.

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

Issuer Purchases of Equity Securities

The following table summarizes the total number of shares of our common stock that we repurchased during the three months ended March 31, 2019 from certain employees who surrendered common stock to pay the taxes in connection with the vesting of restricted stock units.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Maximum Number of Shares That May Yet Be Purchased Under the Program
January (January 1 - January 31)	—	\$ —	—	—
February (February 1 - February 28)	—	—	—	—
March (March 1 - March 31)	18,917	29.56	—	—
Total	18,917	\$ 29.56	—	—

Use of Proceeds

On July 21, 2016, our Registration Statement on Form S-1 (File No. 333-212093) was declared effective by the SEC for our IPO whereby we registered an aggregate of 7,187,500 shares of our common stock, including 937,500 shares of our common stock registered for sale by us upon the full exercise of the underwriters' option to purchase additional shares. On July 27, 2016, we completed our IPO and sold 7,187,500 shares of our common stock at a price to the public of \$11.00 per share. J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC acted as the managing underwriters. The total gross proceeds from the offering to us were \$79.1

million. After deducting underwriting discounts and commissions of \$4.6 million and offering expenses of \$7.3 million, we received \$67.2 million in net proceeds. There has been no material change in the planned use of proceeds from our IPO as described in our final prospectus filed with the SEC on July 22, 2016 pursuant to Rule 424(b) of the Securities Act. We continue to invest the remaining funds received in registered money market funds.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit Number	Exhibit Description
10.1	Agreement to Lease between Aarush (Phase III) Logistics Park Private Limited, Aarush (Phase IV) Logistics Parks Private Limited, Aarush (Phase V) Logistics Parks Private Limited, Aarush Logistics Parks Private Limited, Aarush (Phase II) Logistics Parks Private Limited and Prospect One Manufacturing LLP, dated February 4, 2019 (incorporated by reference to Exhibit 10.36 to the Registrant's Annual Report on Form 10-K (File No. 001-37839) filed on March 5, 2019)
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

* The certifications furnished in Exhibits 32.1 and 32.2 hereto are deemed to accompany this Quarterly Report on Form 10-Q and will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that the Registrant specifically incorporates it by reference.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

Date: May 8, 2019

TPI COMPOSITES, INC.

By: /s/ William E. Siwek
William E. Siwek
Chief Financial Officer
(Principal Financial and Accounting Officer)

CERTIFICATION

I, Steven C. Lockard, certify that:

1. I have reviewed this quarterly report on Form 10-Q of TPI Composites, 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: May 8, 2019

By: /s/ Steven C. Lockard

Steven C. Lockard

President and Chief Executive Officer

(Principal Executive Officer)

CERTIFICATION

I, William E. Siwek, certify that:

1. I have reviewed this quarterly report on Form 10-Q of TPI Composites, 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: May 8, 2019

By: / s/ William E. Siwek

William E. Siwek

Chief Financial Officer

(Principal Financial and Accounting Officer)

**Certification Pursuant To
18 U.S.C. Section 1350,
As Adopted Pursuant To
Section 906 of the Sarbanes-Oxley Act of 2002**

I, Steven C. Lockard, Chief Executive Officer of TPI Composites, Inc., certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. the report on Form 10-Q of TPI Composites, Inc. for the three months ended March 31, 2019 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. Section 78m or 78o(d)); and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of TPI Composites, Inc.

Date: May 8, 2019

By: /s/ Steven C. Lockard
Steven C. Lockard
President and Chief Executive Officer
(Principal Executive Officer)

**Certification Pursuant To
18 U.S.C. Section 1350,
As Adopted Pursuant To
Section 906 of the Sarbanes-Oxley Act of 2002**

I, William E. Siwek, Chief Financial Officer of TPI Composites, Inc., certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. the report on Form 10-Q of TPI Composites, Inc. for the three months ended March 31, 2019 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. Section 78m or 78o(d)); and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of TPI Composites, Inc.

Date: May 8, 2019

By: /s/ William E. Siwek
William E. Siwek
Chief Financial Officer
(Principal Financial and Accounting Officer)