

Focused on Execution



Driving Results

Relentless pursuit of operational excellence

We continue to facilitate synergy in our organization that produces highly functioning processes, people and business through a lean culture. We have a consistent focus on results via:

- Process Standardization from TPI Integrated Production System (TIPS)
- Advanced Technology to Differentiate and Win
- Best in Class Supply Chain

2018+

Broad integration of lean: inherent product quality

- Quality Management System Integration
- Full EHS integration
- Customer and Supplier Kaizen
- Organizational Design
- Process Automation
- Transition Tollgate Process
- Rapid Transition Readiness
- Customer Engagement

2017

Additional tools deployed

- Value Stream Mapping
- Leadership Standard Work
- Kanban
- Layered Audits
- Global Maturity Assessment
- Total Preventive Maintenance
- Strategy Deployment

2016

Foundational tools deployed

- 5S
- Visual Management Boards
- Identifying the Forms of Waste
- Continuous Improvement
- Kaizen
- Poka Yoke (Mistake Proof)
- Root Cause Corrective Action
- Standard Work



CONFINED SPACE

CONFINED SPACE

CAPCO
CAPACITY 100 TON
800-433-3711

EXIT

A journey in lean manufacturing, driving results in Safety, Quality, Delivery and Cost

Our continued focus on day-to-day execution continues to drive down cycle times and direct labor hours. We continually make productivity and throughput improvements to drive results.



Strategically optimized

Our strategy is to continue to diversify our manufacturing footprint to take advantage of growth in both emerging and mature markets. We are well positioned to execute with our facilities in China, Denmark, India, Mexico, Turkey and the United States.



**Strong
Global
Footprint**



- Wind Blade Manufacturing Facility
- Tooling / Engineering / R&D Facility
- Transportation Manufacturing Facility
- Headquarters: Scottsdale, AZ

Letter to our stockholders

Dear Fellow Stockholder,

Thank you for your continued support as an investor in TPI Composites. As many of you know, 2018 was an investment year for TPI, positioning us for more significant growth in the future. We worked diligently with our customers through a significant number of startups and transitions to fulfill their capacity needs. Despite the challenging environment, we were able to once again deliver strong annual performance. I am proud of our team's commitment to operational excellence in our third year navigating the public markets, with net sales eclipsing \$1 billion for the first time in our company's history. In addition, we produced approximately 6.6 GW of wind blade sets, added 16 new manufacturing lines, increased our potential contract value to a record \$6.8 billion and further expanded our robust global pipeline of opportunities in wind and other adjacent markets.

2018 was a strong execution year for TPI, where we continued to deliver on our dynamic growth strategy. We diversified our customer base further by signing a long-term wind blade supply agreement with ENERCON in Turkey. With the addition of ENERCON, TPI now supplies wind blades to the top six global wind turbine OEMs on an ex-China basis,





Revenue Visibility

\$6.8 billion

through 2023



from only three at the time of our IPO. We strengthened our relationship with GE by adding two new lines and extending one supply agreement through 2022, and continued to expand our global footprint with Vestas by contracting four lines in a new geography and facility in Chennai, India and four new lines in a new facility in Yangzhou, China. We also continued to invest in our diversification into new markets. We entered into an agreement with Navistar to design and develop Class 8 trucks comprised of composite tractor and frame rails in March 2018. There is a lot to be excited about and plenty more to come for TPI in the future.

We are confident that growing wind markets will continue to drive our future growth, even in a post-U.S. Production Tax Credit (PTC) and feed-in tariff/subsidy world. Global and

U.S. demand expectations are becoming more robust than initially forecasted. We, like many participants in the wind and utility industries, believe that the economics of wind, along with the demand from both retail and industrial customers, the electrification of the vehicle fleet, and de-carbonization initiatives by utilities will continue to drive wind penetration globally.

Financial Results

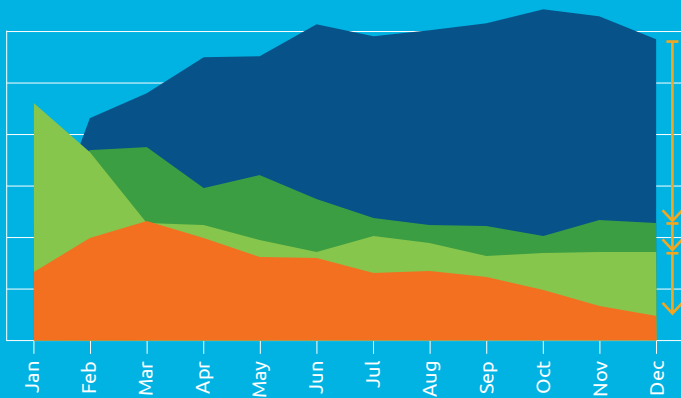
Despite the level of startup and transition activity in 2018, we achieved solid financial results. Net sales and total billings grew 8% and 7% to \$1.0 billion and \$1.0 billion, respectively. Adjusted EBITDA was \$68.2 million, in-line with our expectations. Startups and transitions totaled 16 and 15



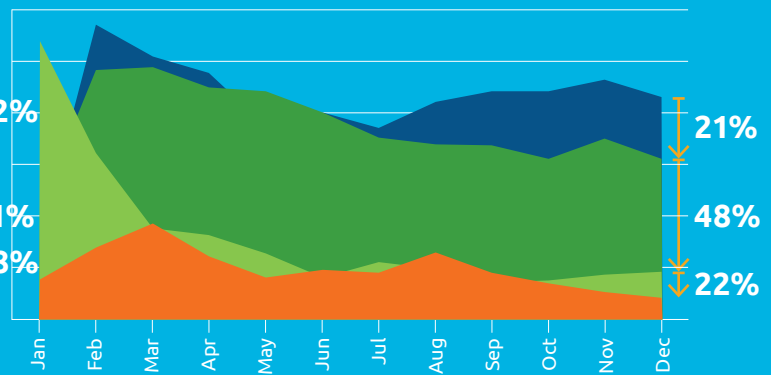
Continuing to improve global safety performance

With recordable incident rates and lost time incident rates both down 60% over the last three years, we continue to mature our safety-first culture at TPI. We are committed to implementing safe work practices and to protecting the wellbeing of our 10,600 associates throughout our operations.

Recordable Incident Rate



Lost Time Incident Rate



● 2015 ● 2016 ● 2017 ● 2018

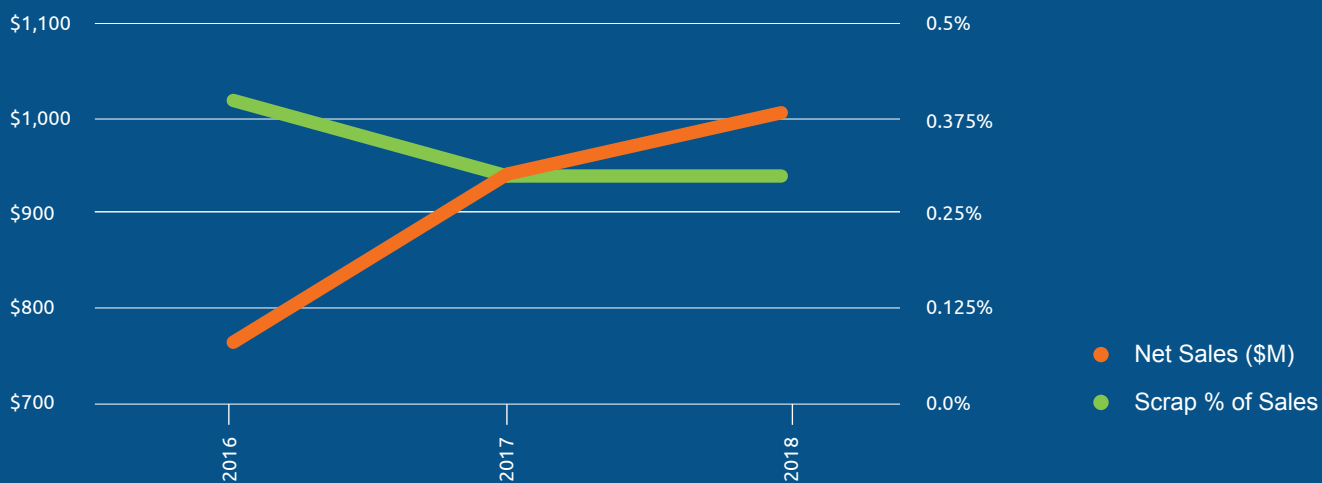


Quality

Data driven performance improvement

Our collaborative approach with our customers, along with our advanced composite technology experience, are critical to our global quality performance.

Global Process Improvements



lines, respectively, and although that weighed on our 2018 results, we believe it positions us well for strong top- and bottom-line growth in 2019. As of February 28, 2019, we have approximately \$6.8 billion of potential revenue under contract across 54 wind blade lines and our transportation manufacturing lines through 2023, with minimum aggregate volume commitments from our customers of approximately \$4.0 billion.

In 2019, our primary focus should be and is on execution. We are expecting 14 lines to be in startup and 10 lines in transition during the year so laser-focused execution on these, as well as all other aspects of our operations, is imperative. We believe the significant investments we've made over the past couple of years position us well to double our 2018 wind revenue to more than \$2.0 billion in 2021 and 2019 is a big step to that goal.

ESG

In 2018, we launched an Environmental, Social and Governance (ESG) program to measure, monitor and enhance our ESG activities using industry recognized frameworks and to ultimately report our results to all of our stakeholders. Sustainability is firmly embedded in our corporate strategy, and covers several priority areas, including governance and ethics, employee health and safety, environmental compliance, training and education, waste management, diversity and equal opportunity, climate and energy. In several parts of the business, we see that sustainability not only delivers planetary benefits, but it has clear business benefits in terms of operational efficiencies, better risk management, and enhanced processes and cost

Delivery

Relentless focus on productivity

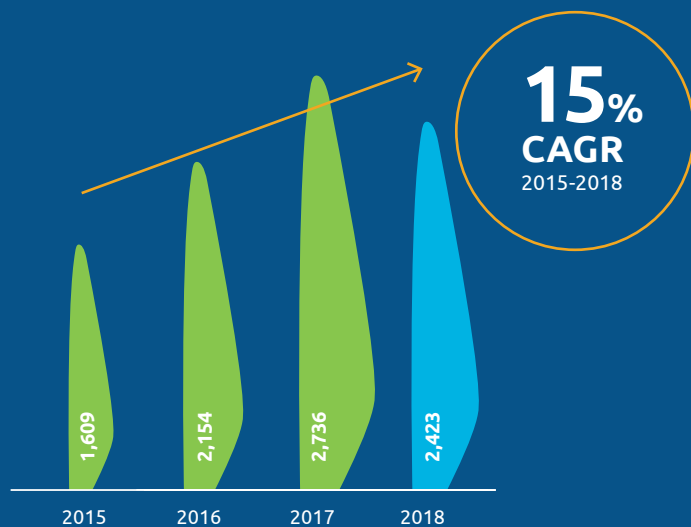
The trend toward larger wind blades drives up MWs produced per set and drives down levelized cost of energy.

Cost

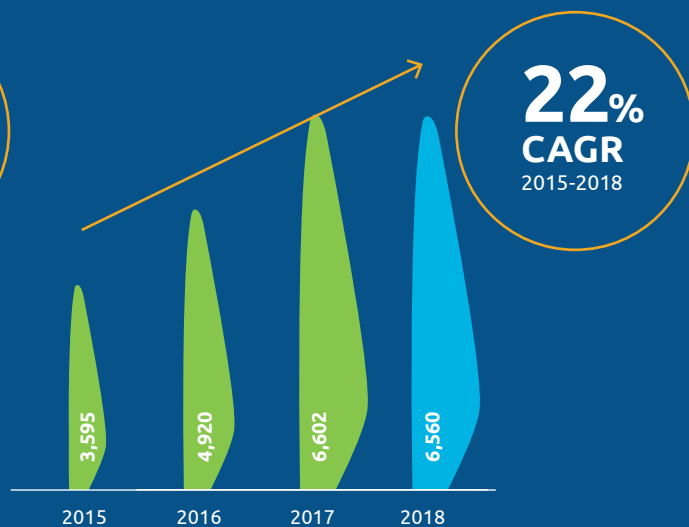
Continued strong annual savings delivered

We are focused on leveraging strong relationships with our global supply base to drive strong savings as we expand our global footprint with new and existing customers.

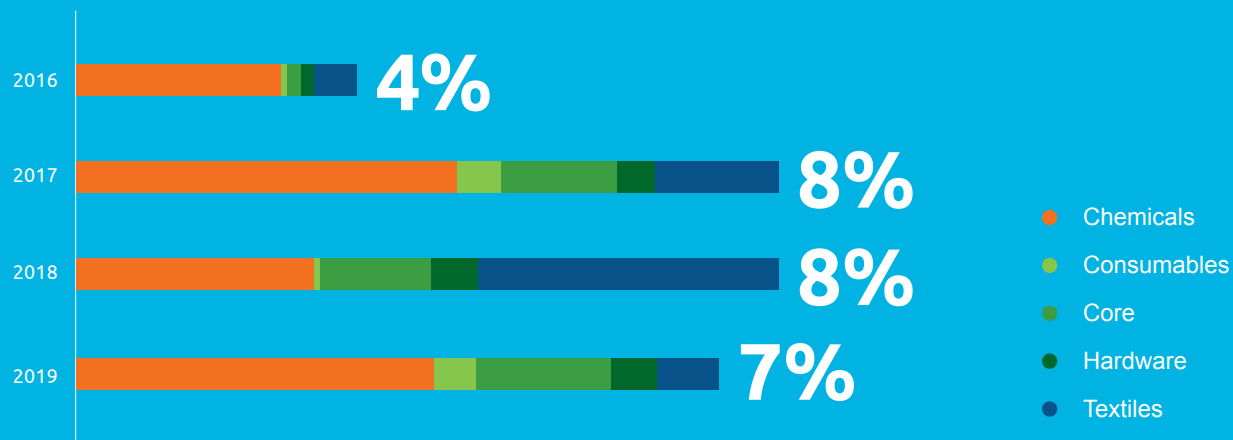
Wind Blade Sets Invoiced



Estimated MWs Invoiced



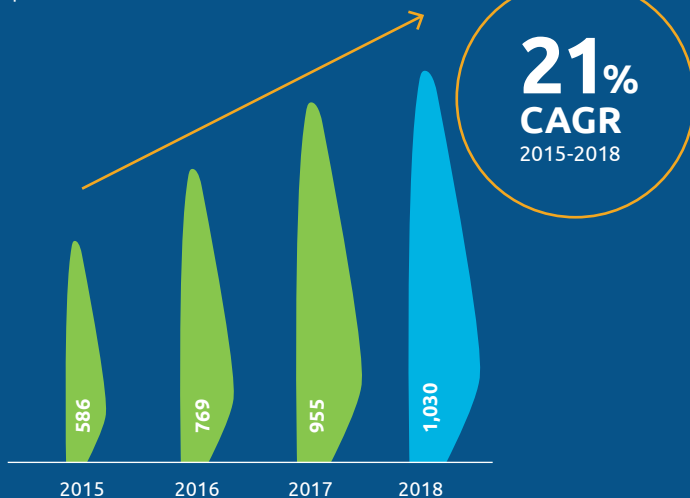
Year-over-Year Raw Material Savings



Financial Results

Net Sales

\$ in millions



Working capital management

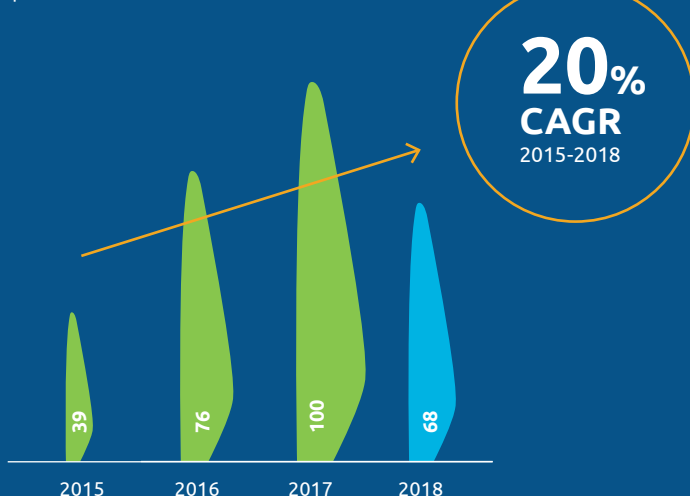
To maximize our availability of working capital, we closely monitor and manage our cash conversion cycle (CCC). Our CCC is calculated as our days-sales-outstanding, plus our days-inventory-on-hand, less our days-payables-outstanding. Our CCC has remained rather efficient as shown below as we actively reduce the collection time of our receivables, manage inventory balances, and extend payables.

CCC — Days



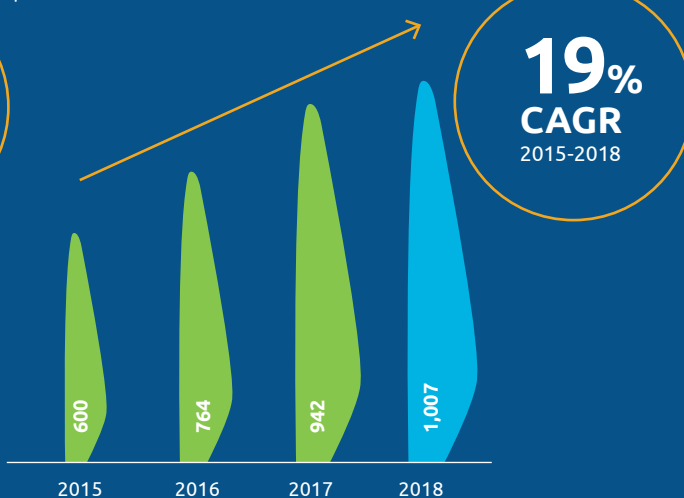
Adjusted EBITDA

\$ in millions



Total Billings

\$ in millions



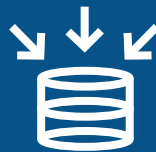
Our ESG Roadmap

Embracing and operationalizing Environmental, Social and Governance (ESG) practices into everything we do will drive growth, improve productivity, reduce operational risks and reduce cost. TPI is committed to ESG and we've developed a roadmap for our long-term ESG strategy.



Materiality Assessment

Through peer analysis and stakeholder engagement, we have identified which ESG topics are material, relevant and aligned to TPI's business strategy.



Data Collection & Processes

We have established and documented procedures for data collection, identification of data owners and developed standard operating procedures for ESG reporting.



Stakeholder Communications

We will create messaging and reporting for all stakeholders – investors, associates, customers and suppliers.

PHASE **1**

PHASE **2**

PHASE **3**

Expected reporting: 2020

TPI's ESG materiality matrix aligned to our business strategy:

Environmental

- Environmental Compliance
- Materials & Material Efficiency
- Waste

Social

- Occupational Health and Safety
- Training and Education
- Local Communities
- Indirect Economic Impacts

Governance

- Governance and Ethics
- Economic Performance

Consistent focus on results

Repeatable

Best in class
supply chain

Focused on
advanced technology



reductions. Furthermore, sustainability allows us to deliver on our vision and mission, and engage our associates and stockholders. We are achieving all of this while making this world a better place for our stakeholders, now and for the generations to come. In this report we have highlighted some aspects of our ESG program, and we look forward to building out our ESG reporting framework in the coming years.

I am proud of the effort and passion of all of our associates as we embrace a challenging operating environment. Our investments and effort will continue to provide growth opportunities for TPI and continue to increase stockholder value.

Thank you for your confidence in TPI Composites. We look forward to your continued support in the years to come.

Sincerely,

Steven C. Lockard

President, Chief Executive Officer and Director

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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2018

OR

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

For the transition period from _____ to _____
Commission File Number 001-37839



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)

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

Title of each class
Common Stock, par value \$0.01

Name of each exchange on which registered
NASDAQ Global Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes No

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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Small reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the Registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the shares of common stock held by non-affiliates of the Registrant, based on the closing price of the shares of common stock on June 29, 2018 as reported by the NASDAQ Global Market on such date was approximately \$589 million. Shares of the Registrant's common stock held by each executive officer, director and holder of 5% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This calculation does not reflect a determination that certain persons are affiliates of the Registrant for any other purpose.

As of January 31, 2019, the Registrant had 34,914,385 shares of common stock outstanding.

Documents Incorporated by Reference

Portions of the Registrant's Definitive Proxy Statement relating to the Annual Meeting of Stockholders, scheduled to be held on May 14, 2019, are incorporated by reference into Part III of this Report.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities law. All statements other than statements of historical facts contained in this Annual Report on Form 10-K, 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 Annual Report on Form 10-K 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; and
- our ability to procure adequate supplies of raw materials and components to fulfill our wind blade volume commitments to our customers.

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 under the heading “Risk Factors” included in Part 1, Item 1A of this 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 Annual Report on Form 10-K represent our views as of the date of this Annual Report on Form 10-K. 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 Annual Report on Form 10-K. 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

Item 1. Business

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 or we). 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.

Overview

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. 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. For a further discussion regarding our wind blade and precision molding and assembly system businesses, refer to the discussion in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations" included in Part II, Item 7 of this Annual Report on Form 10-K.

We also leverage our advanced composite technology and history of innovation to supply high strength, lightweight and durable composite products to the transportation market. In November 2017, we signed a five-year supply agreement with Proterra Inc. (Proterra) to continue to supply Proterra Catalyst® composite bus bodies from our existing Rhode Island facility and also from a new manufacturing facility in Newton, Iowa which commenced operations in the second quarter of 2018. In February 2018, we entered into an agreement with Navistar, Inc. (Navistar) to design and develop a Class 8 truck comprised of a composite tractor, trailer and frame rails. This collaborative development project was entered into in connection with Navistar's recent award under the Department of Energy's (DOE) Super Truck II investment program, which is designed to promote fuel efficiency in commercial vehicles. In November 2018, we announced a capital investment of approximately \$11.5 million in 2019 to develop a highly automated pilot manufacturing line for the electric vehicle market. We plan to locate this pilot line adjacent to our second Newton, Iowa location where we manufacture composite bus bodies for Proterra. We expect this investment will enable us to further develop our technology, create defensible product and process IP and demonstrate our capability to manufacture composite components cost effectively at automotive volume rates. We also expect this pilot line will also help our current and potential customers to de-risk the decision-making process to commit to TPI for high-volume manufacturing programs in the future.

Our wind blade and precision molding and assembly systems manufacturing businesses accounted for approximately 95%, 96%, and 97% of our total net sales for each of the years ended December 31, 2018, 2017 and 2016, respectively. As of February 28, 2019, our long-term wind and transportation supply agreements provide for minimum aggregate volume commitments from our customers of approximately \$4.0 billion and encourage our customers to purchase additional volume up to, in the aggregate, a total contract value of approximately \$6.8 billion through the end of 2023.

Public Offerings and Stock Split

In July 2016, we completed an initial public offering (IPO) of 7,187,500 shares of our common stock at a price of \$11.00 per share, which included 937,500 shares issued pursuant to the underwriters' over-allotment option. Certain of our existing stockholders, a non-employee director and executive officers purchased an aggregate of 1,250,000 shares of our common stock in the IPO included in the total issuance above. The net proceeds from the IPO were \$67.2 million after deducting underwriting discounts and offering expenses. Immediately prior to the closing of the IPO, all shares of the then-outstanding redeemable preferred shares converted into an aggregate of 21,110,204 shares of our common stock and the redeemable preferred share warrants converted on a net issuance basis into 120,923 shares of our common stock. In addition, concurrent with the closing of the IPO, certain subordinated convertible promissory notes in the aggregate principal and interest amount of \$11.9 million were converted into 1,079,749 shares of our common stock at the public offering price of \$11.00 per share.

Prior to the IPO, in July 2016 we amended our amended and restated certificate of incorporation to effect a 360-for-1 forward stock split of our common stock. As a result of the stock split, we have adjusted the share amounts authorized and issuable under the share-based compensation plans. All share and per share common stock information (including the share-based compensation plans) referenced throughout the consolidated financial statements and notes thereto have been retroactively adjusted to reflect this stock split. The stock split did not cause an adjustment to the par value of the authorized shares of our common stock.

In May 2017, we completed a secondary public offering of 5,075,000 shares of our common stock at a price of \$16.35 per share, which included 575,000 shares issued pursuant to the underwriters' option to purchase additional shares. All of the shares were sold by existing stockholders and certain of our executive officers. The selling stockholders received all of the net proceeds of \$78.8 million from the secondary public offering. We did not sell any shares and did not receive any of the proceeds from the offering and the costs paid by us in connection with the offering of \$0.8 million were recorded in general and administrative costs in the accompanying consolidated income statement.

Financial Information about Segments and Geographic Areas

We divide our business operations into four geographic operating segments—the United States (U.S.), Asia, Mexico, 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 for the manufacture of 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 which commenced operations in the second quarter of 2018, (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 we expect to commence operations in the first quarter of 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 the third quarter of 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 expect to commence operations at this facility in the first quarter of 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 the construction of 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.

For additional information regarding our operating segments and geographic areas, see Note 17 – Segment Reporting of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Business Strategy

Our long-term success will be driven by our business strategy. The key elements of our business strategy are as follows:

- ***Grow our existing relationships and develop new relationships with leading industry OEMs.*** We plan to continue growing and expanding our relationships with existing customers who, according to data from Wood Mackenzie (WoodMac), represented approximately 54% of the global onshore wind energy market, approximately 90% of that market excluding China, and 99.8% of the U.S. onshore wind turbine market over the three years ended December 31, 2017, based on megawatts (MWs) of energy capacity installed, as well as developing new relationships with other leading industry OEMs. We expect to be presented with opportunities to expand our existing relationships and develop new relationships with industry OEMs as they seek to capitalize on the benefits of outsourced wind blade manufacturing while maintaining high quality customization and dedicated capacity. In March 2018, we entered into a multiyear supply agreement with Vestas Wind Systems A/S (Vestas) to supply wind blades from a new manufacturing facility in the Yangzhou Economic & Technical Development Zone in Yangzhou, China and we expect to commence operations at this facility in the first quarter of 2019. In May and July 2018, Vestas exercised its option for a total of four additional wind blade manufacturing lines under an existing multiyear supply agreement at our Matamoros, Mexico location and we commenced operations in the third quarter of 2018. In May 2018, we entered into a multiyear supply agreement with ENERCON GmbH (ENERCON) to supply wind blades from our second manufacturing facility in Izmir, Turkey and we commenced operations in the fourth quarter of 2018. In August 2018, General Electric International, Inc. and its affiliates (GE Wind) agreed to extend our existing multiyear supply agreement in one of our Mexico plants by two years to 2022 and increased the number of wind blade manufacturing lines in that facility from three to five. In addition, GE Wind has agreed to transition to a larger blade model in our Newton, Iowa plant in early 2019 and to eliminate its option to terminate their supply agreement at this location prior to its December 2020 expiration. In December 2018, we entered into a multiyear supply agreement with Vestas to supply wind blades from 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.
- ***Expand our footprint in large and growing wind markets, capitalize on the continuing outsourcing trend, evaluate building wind turbine blades for the offshore market and evaluate strategic acquisitions.*** As the wind energy market continues to expand globally and many wind turbine OEMs continue to shift towards increased outsourcing of wind blade manufacturing, we believe we are well-positioned to continue the expansion of our global footprint. We utilize our strengths in composites technology and manufacturing, combined with our collaborative dedicated supplier model to provide our customers with an efficient solution for their expansion in large and growing wind markets. Our quality, reliability and total delivered cost reduce sourcing risk for our customers. In addition, our demonstrated ability to expand into new markets and the strength of our manufacturing capabilities afford us the optionality to build new factories or grow through strategic acquisitions.

- ***Continue to drive down costs of wind energy.*** We continue to work with our customers on larger size wind blade models that maximize the capture of wind energy and drive down the levelized cost of energy (LCOE). We also continue to utilize our advanced technology, regional manufacturing facilities strategically located to cost effectively serve large and growing wind markets and ability to source materials globally at competitive costs to deliver high-performing, composite wind blades. Our collaborative engineering approach and our advanced precision molding and assembly systems allow us to integrate our customer’s design requirements with cost-efficient, replicable and scalable manufacturing processes. This collaborative engineering approach with our customers also allows us to reduce manufacturing cycle times and new blade model transition times. We also continue to work with our customers to drive down the cost of materials and production, the benefit of which we typically share with our customers contractually in a manner that reduces LCOE for customers, further strengthens our customer relationships and improves our margins.
- ***Expand our transportation business and expand into other strategic markets.*** We leverage our advanced composite technology and history of innovation to supply high strength, lightweight and durable composite products to the transportation market. As the vehicle electrification trend continues, reducing the weight of these vehicles is critical to expanding range and/or providing more room for additional batteries or reducing the number of batteries. As a result, we believe there is an increasing demand for composites products for electric vehicles. In addition, we believe there is a potential demand in other strategic markets for composites as to replace aluminum or other more expensive composite materials such as carbon.
- ***Focus on continuing innovation.*** We have a history of innovation in advanced composite technologies and production techniques and use several proprietary technologies related to wind blade manufacturing. With this culture of innovation and a collaborative “design for manufacturability” approach, we continue to address increasing physical dimensions, demanding technical specifications and strict quality control requirements for our customers’ most advanced wind blades. We also invest in ongoing simplification and selective automation of production processes for increased efficiency and precision. In addition, we plan to leverage our history of composite industry-first innovations to grow our business in the transportation market, in which we believe there is a demand for high precision, structural composites manufacturing.

Wind Blade Manufacturing Operations and Process

We have developed significant expertise in advanced composite technology and use high performance composite materials, precision molding and assembly systems including modular tooling, and advanced process technology, as well as sophisticated measurement, inspection, testing and quality assurance tools, allowing us to produce over 45,000 wind blades since 2001 with an excellent field performance record in a market where reliability is critical to our customers’ success. We manufacture or have manufactured wind blades ranging from 30 meters to over 70 meters across our global facilities, and have the capability to manufacture wind blades of greater lengths as required by existing or new customers. In combination with our advanced technologies, we seek to create manufacturing processes that are replicable and scalable in our manufacturing facilities located worldwide, regardless of cultural or language barriers. Our integrated manufacturing process, the TPI Integrated Production System (TIPS) allows us to customize each manufacturing step, from raw materials to finished products. TIPS also allows us to systematically design for the entire manufacturing process so that we can achieve better quality control and increase production efficiencies. We believe that our focus on simplifying and, where feasible, automating production processes is critical to manufacturing high-precision, lightweight and durable products at a reasonable cost to our customers. We produce high unit volumes of near-aerospace grade products at industrial costs.

Raw Materials

The key raw materials for the wind blades we manufacture include highly advanced fiberglass fabrics, select carbon reinforcements, foam, balsa wood, resin, adhesives for assembly of molded components, gel coat or paint for preparation of cosmetic surfaces and attachment hardware including steel components. Most of these materials are available in multiple geographic regions and in reasonably close proximity to our manufacturing facilities. Our agreements for the supply of raw materials are designed to guarantee volumes that we believe will be required to

fulfill our customers' wind blade commitments. A portion of our raw materials are subject to price volatility, such as the resins used in our manufacturing processes. Although the majority of materials incorporated into our products are available from a number of sources, certain materials are available only from a relatively limited number of suppliers. We seek multiple suppliers for our raw materials and continually evaluate potential new supplier relationships.

Precision Molding and Assembly Systems

Over the last decade, we have produced hundreds of precision molding and assembly systems, ranging from 30 meters to over 70 meters in length, to support our global operations. We began these operations in our tooling technology center in Warren, Rhode Island. In 2013, we expanded our precision molding and assembly system production capabilities to a facility in Taicang City, China, which serves customers around the globe. While capable of cost-effectively delivering precision molding and assembly systems across all of our facilities, our Rhode Island tooling technology center primarily serves the North American market. We are currently in the process of transitioning our North American precision molding and assembly system production capabilities from Warren, Rhode Island to a new facility in Juárez, Mexico, which can serve customers globally. We expect this transition to be completed by the end of 2019. Our precision molding and assembly systems have been used to build tens of thousands of wind blades worldwide.

Our tooling solutions include precision wind blade patterns, precision molding and assembly systems, including modular tooling techniques. We believe that our technological and production expertise are key factors in our continued competitiveness, as we address continually increasing physical dimensions, demanding technical specifications, and strict quality control requirements for wind blades.

Wind Blade Production Process

Production of wind blades requires adherence to the unique specifications of our customers, who design their wind turbines and wind blades to optimize performance, reliability and total delivered cost. With our culture of innovation and a collaborative "design for manufacturability" approach, we have the capability and expertise to manufacture wind blades of different designs, utilizing fiberglass, carbon or other advanced composite materials to meet unique customer specifications. We also have the flexibility to quickly transition our manufacturing facilities to produce different wind blade models and sizes using our precision molding and assembly systems, including modular tooling techniques.

We have developed a highly dependable method for making high-quality wind blades. In conjunction with our TIPS process, we design our proprietary manufacturing processes to be replicable, scalable and transferable to each of our advanced manufacturing facilities worldwide. As a result, we can repeatedly move a product from its design phase to volume production while maintaining quality, even in developing regions of the world. Similarly, we have developed the manual portions of our manufacturing processes based on proven technologies and production methods that can be learned and implemented rapidly by line personnel. We focus on consistency and quality control across our facilities, using hands-on training methods and employing repeatable manufacturing processes.

We use an advanced form of vacuum-assisted resin transfer tooling process to pull liquid resin into a dry lay-up, resulting in light, strong, and reliable composite structures. In our manufacturing process, fiber reinforcements and core materials are laid up in a mold while dry, followed by a vacuum bag that is placed over the layup and sealed to the mold. The wind blade component is then placed under vacuum. The resin is introduced into the wind blade component via resin inlet ports and then distributed through the reinforcement and core materials via a flow medium and a series of channels, saturating the wind blade component. The vacuum removes air and gases during processing, thereby eliminating voids. Pressure differentials drive resin uniformly throughout the wind blade component, providing a consistent laminate. By using a variety of reinforcement and core materials, the structural characteristics of the wind blade can be highly engineered to suit the custom specifications of our customers. Although only occasionally required by our customers, we are also capable of employing additional composite fabrication processes, such as pre-impregnated laminates, in addition to our vacuum infusion process.

Wind Blade Long-Term Supply Agreements

Our current wind blade customers, which include GE Wind, Vestas, Siemens Gamesa Renewable Energy S.A. (Siemens Gamesa), Nordex SE (Nordex), Senvion S.A. (Senvion) and ENERCON, are some of the world's largest wind turbine manufacturers. According to data from WoodMac, our customers represented approximately 54% of the global onshore wind energy market, approximately 90% of that market excluding China, and 99.8% of the U.S. onshore wind turbine market over the three years ended December 31, 2017, based on MWs of energy capacity installed. In our collaborative dedicated supplier model, our customers are incentivized to maximize the volume of wind blades purchased through lower pricing at higher purchase volumes. As of February 28, 2019, our existing wind blade supply agreements provide for minimum aggregate volume commitments from our customers of approximately \$4.0 billion and encourage our customers to purchase additional volume up to, in the aggregate, a total contract value of approximately \$6.8 billion through the end of 2023, which we believe provides us with significant future revenue visibility and helps to insulate us from potential short-term fluctuations or legislative changes in any one market. Our supply agreements generally contain liquidated damages provisions in the event of late delivery, however, we generally do not bear the responsibility for transporting the wind blades we manufacture to our customers.

GE Wind

In 2007, we entered into multiple supply agreements to build two facilities and manufacture wind blades for GE Wind in Taicang Port, China and Newton, Iowa. Based on the success of these manufacturing arrangements, we expanded our relationship with GE Wind through additional supply agreements for a manufacturing facility in Turkey and two manufacturing facilities in Mexico. Each of the supply agreements with GE Wind provide for a minimum number of wind blade sets to be purchased by GE Wind each year during the term, the schedule for which is established at the outset of the agreement. In return, we commit to dedicate a specific number of manufacturing lines to GE Wind for each of the years under the supply agreements. Additionally, we create model-specific tooling for GE Wind. For the year ended December 31, 2017, we recorded sales under these supply agreements with GE Wind of \$426.1 million, \$198.6 million of which was for the portion of 2017 that GE Wind was considered a related party. In 2017, GE Wind announced that they would not renew or extend the Turkey and Taicang Port, China supply agreements, which both expired on December 31, 2017. In August 2018, GE Wind did agree to extend our existing supply agreement in one of our Mexico plants by two years to 2022 and increased the number of wind blade manufacturing lines in that facility from three to five. In addition, GE Wind has agreed to transition to a larger blade model in our Newton, Iowa plant in early 2019 and to eliminate its option to terminate their supply agreement at this location prior to its December 2020 expiration. Unless otherwise terminated or renewed, our supply agreements with GE Wind are in effect until the end of 2020 for our Iowa and one of our Mexico facilities and until the end of 2022 for our other Mexico facility. GE Wind may terminate the Mexico supply agreements with no advance notice and paying us termination fees as set forth in the applicable agreement. In addition, either party may terminate these supply agreements upon a material breach by the other party which goes uncured for 30 days after written notice has been provided.

In 2017, General Electric Company (GE) completed its acquisition of LM Wind Power (LM), our largest competitor. We expect that GE Wind will utilize LM for a substantial percentage of its wind blade production in the future and may reduce the volumes of wind blades it purchases from us or not extend any of our supply agreements beyond 2022, which may materially harm our business, financial condition and results of operations. See "Risk Factors—Risks Related to Our Wind Blade Business—GE's acquisition of LM Wind Power, our largest competitor, may materially harm our business, financial condition and results of operations and may cause the price of our common stock to decline" included in Part I, Item 1A of this Annual Report on Form 10-K for further discuss on the GE's acquisition of LM and its potential effects on us.

See Note 4 – Related Party Transactions of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information regarding our related party transactions with GE Wind.

Other Long-Term Supply Agreements

We have entered into other long-term supply agreements in China, Mexico, Turkey and India. With respect to these supply agreements, we agree to dedicate capacity for a set number of wind blades for each calendar year during the term of the agreement in exchange for commitments to purchase minimum annual volumes of wind blade sets. Unless otherwise terminated, these supply agreements generally remain in effect for a period of five years and either party may terminate their respective supply agreements upon a material breach by the other party which goes uncured. Some of these supply agreements contain provisions that allow for our customers to purchase less volume in later years of these supply agreements, reduce the number of dedicated manufacturing lines or to terminate the supply agreement upon notice for reasons such as our failure to deliver the contracted wind blade volumes or our failure to meet certain mutually agreed upon cost reduction targets. See “Risk Factors—Risks Related to Our Wind Blade Business—Our long-term supply agreements with our customers are subject to termination on short notice and our failure to perform our obligations under such agreements, and termination of a significant number of these agreements would materially harm our business” included in Part I, Item 1A of this Annual Report on Form 10-K.

Research and Development

We have a long history of developing composite products as well as the development of new and advanced materials, tooling, manufacturing processes and inspection methods. Our knowledge and experience of composite materials and manufacturing originates with our predecessor company, Tillotson Pearson Inc., a leading manufacturer of high-performance recreational sail and powerboats along with a wide range of composite structures used in other industrial applications. Leveraging our knowledge and experience, we realized the opportunity to specialize in wind energy and other industrial end-markets where there was a demand for high precision composite manufacturing capabilities.

We conduct extensive research and development in close collaboration with our customers on the design, development and deployment of innovative manufacturing processes, including automation, advanced materials and sophisticated product quality inspection tools. We have partnered with the U.S. Department of Energy (DOE), government laboratories, universities and our customers to innovate through cost sharing Advanced Manufacturing Innovation Initiative programs. In 2015, we received a \$3.0 million award from the DOE’s Office of Energy Efficiency & Renewable Energy to lead a team of industry and academic participants to design, develop and demonstrate an ultra-light composite vehicle door for high volume manufacturing production in conjunction with other industry and university participants. In February 2018, we entered into an agreement with Navistar to design and develop a Class 8 truck comprised of a composite tractor, trailer and frame rails. This collaborative development project was entered into in connection with Navistar’s recent award under the DOE’s Super Truck II investment program, which is designed to promote fuel efficiency in commercial vehicles. Incorporating composite materials into a Class 8 truck offers multiple potential performance and efficiency advantages compared to traditional metals in terms of weight savings, reduced part counts, and non-corrosion.

We employ a highly experienced workforce of engineers in various facets of our business, from discrete research and development projects, to the ongoing, real-time development and implementation of incremental manufacturing and material improvements. Our research and development effort places a priority on improving quality through process and procedure improvement, in addition to reducing cost through specification changes and sourcing of more cost-effective suppliers. Other areas of emphasis include composite design, in-house fabrication of precision molding and assembly systems, prototyping, testing, optimization and volume production capabilities. We also encourage our employees to invent and develop new technologies to maintain our competitiveness in the marketplace. In addition to our internal research and development activities, from time to time, we also conduct research and development activities pursuant to funded development arrangements with our customers and other third parties, and intend to continue to seek opportunities for product development programs that could create recurring revenue and increase our overall profitability over the long term.

For financial statement purposes, research and development performed is reflected in general and administrative expenses in our consolidated income statements.

Competition

The wind blade market is highly concentrated, competitive and subject to evolving customer needs and expectations. In 2017, GE Wind, our largest customer, completed its acquisition of LM, our largest competitor. We also compete primarily with other independent wind blade manufacturers such as Sinoma Science & Technology Co. Ltd., Shanghai Aeolon Wind Energy Technology Development (Group) Co., Ltd., Aeris Industria E Comercio De Equipamentos Para Geracao De Energia S.A. and ZhongFu Lianzhong Composites Group Co., Ltd., as well as regional wind blade suppliers in geographic areas where our current or prospective manufacturing facilities are located.

We also compete with, and in a number of cases supplement, vertically integrated wind turbine OEMs that manufacture their wind blades. We believe that a number of other established companies are manufacturing wind blades that will compete directly with our offerings, and some of our competitors, including LM, Sinoma Science & Technology Co. Ltd., Aeris Industria E Comercio De Equipamentos Para Geracao De Energia S.A. and ZhongFu Lianzhong Composites Group Co., Ltd. may have significant financial and institutional resources.

The principal competitive factors in the wind blade market include reliability, total delivered cost, manufacturing capability, product quality, engineering capability and timely completion of wind blades. We believe we compete favorably with our competitors on the basis of the foregoing factors. Our ability to remain competitive will depend to a great extent upon our ongoing performance in the areas of manufacturing capability, timely completion and product quality.

Transportation Products

We seek to create additional recurring revenue opportunities through the supply of other composite structures outside the wind energy market. We believe transportation products, including buses, trucks, electric vehicles and high performance automotive products, are ideally suited for our advanced composite technology because of the benefits derived from weight reduction, corrosion resistance, strength and durability. These benefits should allow us to develop structural composite solutions to assist our customers in developing electric vehicles as well as buses with clean propulsion systems or in meeting new and developing fuel economy standards including the 2025 U.S. Government Corporate Average Fuel Economy standards that are pushing automakers to develop lighter, more fuel efficient vehicles with lower emissions. President Trump, however, issued an executive order in March 2017 requiring the U.S. Environmental Protection Agency (EPA) to review the implementation timing and mileage targets of these standards.

In addition, by producing a range of composite structures, we are able to leverage the materials and manufacturing process technology and expertise developed through one project to maximize production quality, improve performance and minimize costs across our other manufacturing efforts, including our wind blade business. Our projects for customers in the transportation market have historically generated project-related revenues for a specific duration. We intend to seek collaborations with additional customers in these markets that will provide recurring revenue and business opportunities for us, in addition to the opportunities provided by our existing customers and relationships, and contribute to our overall profitability over the long term.

Our facilities in Warren, Rhode Island and Newton, Iowa manufacture products for customers in the transportation market using a similar proprietary and replicable manufacturing processes that we use to produce wind blades. Our projects for customers in the transportation market include, or have included, the supply of all-composite bodies for electric buses and automated people mover systems for airports.

Our current principal competitors in the transportation market include suppliers of conventional steel and aluminum products and non-structural automotive fiberglass and other advanced composites-based manufacturers for transportation applications.

Intellectual Property

We have a variety of intellectual property rights, including patents (filed and applied-for in a number of jurisdictions, including the United States, the European Union and China), trademarks and copyrights, but we believe that our continued success and competitive position depend, in large part, on our proprietary materials, tooling, process and inspection technologies and our ability to innovate. Accordingly, we take measures to protect the confidentiality and control the disclosure of our proprietary technology. We rely primarily on a combination of patents, know-how and trade secrets to establish and protect our proprietary rights and preserve our competitive position. We also seek to protect our proprietary technology, in part, by confidentiality agreements with our customers, employees, consultants and other contractors. Trade secrets, however, are difficult to protect. These agreements may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our customers, employees, consultants or contractors use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

Backlog

As of December 31, 2018 and 2017, our backlog for wind blades and related products totaled \$514.8 million and \$555.8 million, respectively. Our backlog includes purchase orders issued in connection with our long-term supply agreements. We generally record a purchase order into backlog when the following requirements have been met: a signed long-term supply agreement or other contractual agreement has been executed with our customer, a purchase order has been issued by our customer and we expect to ship wind blades to or produce the related products for such customer in satisfaction of any purchase order within 12 months. Backlog as of any particular date should not be relied upon as indicative of our revenue for any future period.

Regulation

Wind Energy

Our operations are subject to various foreign, federal, state and local regulations related to environmental protection, health and safety, labor relationships, general business practices and other matters. These regulations are administered by various foreign, federal, state and local environmental agencies and authorities, including the EPA, the Occupational Safety and Health Administration of the U.S. Department of Labor and comparable agencies in China, Mexico, Turkey, India and individual U.S. states. In addition, our manufacturing operations in China, Mexico, Turkey and India are subject to those countries' wage and price controls, currency exchange control regulations, investment and tax laws, laws restricting our ability to repatriate profits, trade restrictions and laws that may restrict foreign investment in certain industries. Some of these laws have only been recently adopted or are subject to further rulemaking or interpretation, and their impact on our operations, including the cost of complying with these laws, is uncertain. We believe that our operations currently comply, in all material respects, with applicable laws and regulations. Further, as a U.S. corporation, we are subject to The Foreign Corrupt Practices Act of 1977 (FCPA), which generally prohibits U.S. companies and their intermediaries from making improper payments to foreign officials for the purpose of obtaining or keeping business.

In addition, our business has been and will continue to be affected by subsidization of the wind turbine industry with its influence declining over time as wind energy reaches grid parity with traditional sources of energy. In the United States, the federal government has encouraged capital investment in renewable energy primarily through tax incentives. Production tax credits for new renewable energy projects were first established in 1992. The Production Tax Credit for Renewable Energy (PTC) provided the owner of a wind turbine placed in operation before January 1, 2015 with a 10-year credit against its U.S. federal income tax obligations based on the amount of electricity generated by the wind turbine.

The PTC was extended in 2015 for wind power projects through December 31, 2019, and is currently contemplated to be phased down over the term of the PTC extension. Specifically, the PTC will be kept at the same rate in effect at the end of 2014 for wind power projects that either commenced construction or met certain safe harbor requirements by the end of 2016, and thereafter will be reduced by 20% per year in 2017, 2018 and 2019, respectively.

In 2015, the EPA announced a final rule adopted pursuant to the Clean Air Act, known as the Clean Power Plan, which establishes national standards for states to reduce carbon emissions from power plants. Specifically, the Clean Power Plan requires states to reduce carbon emissions from power plants 32% below 2005 levels by 2030. The Clean Power Plan also provides for interim state-level compliance reduction targets beginning in 2022 through 2030 based on individualized targets for each of the states utilizing 2012 historical carbon emissions data and three building blocks for emissions reduction including: increasing generation from new zero-emitting renewable energy sources such as wind. In 2016, the U.S. Supreme Court issued a stay of the EPA's implementation of the Clean Power Plan until the D.C. Circuit of the United States Court of Appeals decides upon the merits of multiple lawsuits challenging the legality of the Clean Power Plan. In 2017, President Trump signed an executive order that requires, among other things, that the EPA review the Clean Power Plan and publish a rule to either suspend, revise or rescind it.

At the state level, as of December 31, 2018, 29 states, the District of Columbia and Puerto Rico have implemented renewable portfolio standard (RPS) programs that generally require that, by a specified date, a certain percentage of a utility's electricity supplied to consumers within such state is to be from renewable sources (ranging from 10% to 100% and from between the present and 2045).

In addition, there are also increasing regulatory efforts to promote renewable power. China is implementing its 13th 5-Year Plan with a goal of 15% total primary energy from non-fossil fuel sources and targeting 210 gigawatts (GWs) of grid-connected wind capacity by 2020 according to its National Development and Reform Commission, and employs preferential feed-in tariff schemes, in addition to local tax-based incentives. Mexico has established strict targets, aiming for 35% renewable energy by 2024 and 50% by 2050, according to WoodMac, which it is facilitating through tax incentives. Large European Union members have renewable energy targets for 2020 of between 13% and 49% of all energy use derived from renewable energy sources, according to WoodMac. Additionally, Turkey enacted Law No. 5346 in 2005 to promote renewable-based electricity generation within their domestic electricity market by introducing tariffs and purchase obligations for distribution companies requiring purchases from certified renewable energy producers. The World Bank also provided Turkey with an aggregate of \$600 million of loan proceeds to encourage investors to construct generation plants with renewable energy resources.

Employees

As of December 31, 2018, we employed over 10,600 full-time employees, approximately 1,300 of whom were located in the United States, 2,400 in China, 4,100 in Mexico and 2,800 in Turkey. Certain of our employees in Turkey and at our manufacturing facility in Matamoros, Mexico are represented by a labor union. We believe that our relations with our employees are generally good.

In January 2019, thousands of workers employed in dozens of manufacturing facilities in Matamoros, Mexico, went on strike. In general, these workers, who were represented by several different labor unions, demanded a twenty percent increase in their wage rate and an annual bonus of approximately \$1,700. On February 15, 2019, our manufacturing production employees in Matamoros, Mexico, who are represented by a labor union, went on strike also demanding a 20 percent increase in their hourly wage rate and the payment of an annual bonus of approximately \$1,700 even though our collective bargaining agreement does not provide for an annual bonus. During this strike, our Matamoros manufacturing facility stopped production from February 15, 2019 until March 2, 2019. On March 2, 2019, we reached an agreement with the labor union to end the strike and we reopened our Matamoros manufacturing facility on March 3, 2019.

Available Information

Our website address is www.tpicomposites.com. All of our filings with the Securities and Exchange Commission (SEC), including this Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, statements of changes in beneficial ownership and amendments to those reports, are available free of charge on our website as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained on our website is neither a part of, nor incorporated by reference into, this Annual Report on Form 10-K. The SEC also maintains an Internet website that contains reports, proxy and information

statements, and other information regarding issuers, like us, that file electronically with the SEC. The address of that website is www.sec.gov.

Our investor relations website address is www.tpicomposites.com/investors and includes key information about our corporate governance initiatives, including our Nominating and Corporate Governance Committee charter, charters of the Audit and Compensation committees and our Code of Business Conduct and Ethics.

Executive Officers

The following table sets forth certain information regarding our Executive Officers as of February 28, 2019:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Steven C. Lockard	57	President, Chief Executive Officer and Director
Joseph G. Kishkill	54	Chief Commercial Officer
William E. Siwek	56	Chief Financial Officer
Thomas J. Castle	47	Senior Vice President—U.S. and Transportation Operations
Steven G. Fishbach	49	General Counsel and Secretary

Steven C. Lockard. Mr. Lockard became our President and Chief Executive Officer in 2004 and has served as a member of our board of directors since 2004. Prior to joining us in 1999, Mr. Lockard was Vice President of Satloc, Inc., a supplier of precision GPS equipment, from 1997 to 1999. Prior to that, Mr. Lockard was Vice President of marketing and business development and a founding officer of ADFlex Solutions, Inc., a NASDAQ-listed international manufacturer of interconnect products for the electronics industry, from 1993 to 1997. Prior to that, Mr. Lockard held several marketing and management positions including Business Unit Manager, Corporate Market Development Manager and Marketing/Applications Engineer at Rogers Corporation from 1982 to 1993. Mr. Lockard serves as the Chairman of the board of directors for the American Wind Energy Association. Mr. Lockard holds a B.S. degree in Electrical Engineering from Arizona State University.

Joseph G. Kishkill. Mr. Kishkill joined us as our Chief Commercial Officer in August 2017. Prior to joining us, Mr. Kishkill provided general consulting services to various clients in the solar and oil and gas industries from July 2016 to July 2017. Prior to that, Mr. Kishkill served as President, International of First Solar, Inc. from July 2015 until June 2016, and as Chief Commercial Officer from August 2013 to June 2015, where he had responsibility for global business development, sales and international public affairs. Prior to joining First Solar, Inc., Mr. Kishkill was President, Eastern Hemisphere Operations, for Exterran Energy Solutions, L.P. and Senior Vice President of Exterran Holdings, Inc., a global provider of natural gas, petroleum and water treatment production services from 2009 to 2013. Prior to that, he led Exterran's business in the Latin America region. Prior to joining Exterran's predecessor company in 2002, Mr. Kishkill held positions of increasing responsibility with Enron Corporation from 1990 to 2001, advancing to Chief Executive Officer for South America. Mr. Kishkill holds an M.B.A. degree from the Harvard Graduate School of Business Administration and a B.S. degree in Electrical Engineering from Brown University.

William E. Siwek. Mr. Siwek joined us as our Chief Financial Officer in August 2013. Prior to joining us, Mr. Siwek previously served as the Chief Financial Officer for T.W. Lewis Company, an Arizona-based real estate investment company, from September 2012 to September 2013. From May 2010 until September 2012, he was an independent consultant assisting companies in the real estate, construction, insurance and renewable energy industries. Prior to that, Mr. Siwek was Executive Vice President and Chief Financial Officer of Talisker Mountain, Inc., from January 2009 to April 2010. Prior to that, he was President and Chief Financial Officer of the Lyle Anderson Company from December 2002 to December 2008. Prior to that, Mr. Siwek spent 18 years, from September 1984 to May 2002, with Arthur Andersen where he became a Partner in both Audit and Business Consulting Divisions. Mr. Siwek holds B.S. degrees in Accounting and Economics from University of Redlands and is a Certified Public Accountant.

Thomas J. Castle. Mr. Castle joined us in November 2015 as our Senior Vice President—North American Wind Operations and Global Operational Excellence. In February 2019, Mr. Castle was named our Senior Vice President—U.S. and Transportation Operations. Prior to joining us, Mr. Castle was with Honeywell Aerospace from 2007 to 2015. Mr. Castle served as the Vice President of Integrated Supply Chain, Americas Electronics Operations Center from 2014 to 2015. From 2012 to 2014, he was the Global Vice President of the Honeywell Operating System for Aerospace. Prior to that, Mr. Castle held various positions at the Americas Services Organization from

2007 to 2012. From 1996 to 2007, Mr. Castle was with GE Aviation in roles of increasing responsibility, most recently as the Managing Director of a manufacturing facility in Thailand from 2005 to 2007. Mr. Castle holds a B.S. degree in Aeronautics from St. Louis University.

Steven G. Fishbach. Mr. Fishbach has served as our General Counsel since January 2015. Prior to joining us, Mr. Fishbach served as Deputy General Counsel of Global Cash Access Holdings, Inc. from 2011 to 2015 and Associate General Counsel from 2009 to 2011. Prior to that, Mr. Fishbach served in various senior roles in the legal department of Fidelity National Information Services, Inc./eFunds Corporation from 2005 to 2008. Mr. Fishbach also practiced corporate and securities law at Squire Sanders (now Squire Patton Boggs) from 2000 to 2005. Mr. Fishbach holds a B.A. degree in American Studies from Georgetown University and a J.D. degree from William & Mary Law School.

Item 1A. Risk Factors

You should carefully consider the following risk factors. If any of the events contemplated by the following discussion of risks should occur, our business, results of operations, financial condition, growth prospects and cash flows could suffer significantly. Additional risks that we currently do not know about or that we currently believe to be immaterial may also impair our business. Certain statements below are forward-looking statements. See “Special Note Regarding Forward-Looking Statements” in this Annual Report on Form 10-K.

Risks Related to Our Wind Blade Business

A significant portion of our business is derived from a small number of customers, and two wind blade customers in particular, therefore any loss of or reduction in purchase orders, failure of these customers to fulfill their obligations or our failure to secure long-term supply agreement renewals from these customers could materially harm our business.

Substantially all of our revenues are derived from four wind blade customers. Two customers, GE Wind and Vestas, accounted for 31.7% and 32.0%, respectively, of our total net sales for the year ended December 31, 2018, 44.6% and 27.9%, respectively, of our total net sales for the year ended December 31, 2017, and 48.4% and 22.2%, respectively, of our total net sales for the year ended December 31, 2016. In addition, two customers, Nordex and Siemens Gamesa accounted for 19.0% and 11.2%, respectively, of our net sales for the year ended December 31, 2018, 16.0% and 9.7%, respectively, of our net sales for the year ended December 31, 2017, and 18.0% and 10.2%, respectively, of our net sales for the year ended December 31, 2016. Accordingly, we are substantially dependent on continued business from our current wind blade customers, and GE Wind and Vestas in particular. If one or more of our wind blade customers were to reduce or delay wind blade orders, file for bankruptcy or become insolvent, fail to pay amounts due or satisfactorily perform their respective contractual obligations with us or otherwise terminate or fail to renew their long-term supply agreements with us, our business, financial condition and results of operations could be materially harmed.

Defects in materials and workmanship or wind blade failures could harm our reputation, expose us to product warranty or other liability claims, decrease demand for wind blades we manufacture, or materially harm existing or prospective customer relationships.

Defects in the wind blades we manufacture, whether caused by a design, engineering, materials, manufacturing or component failure or deficiencies in our manufacturing processes, are unpredictable and an inherent risk in manufacturing technically advanced products. Under our supply agreements, we warranty the materials and workmanship of the wind blades while our customers are responsible for the fitness of use and design of the wind blades. We have, in the past, experienced wind blade testing failures and defects at some of our facilities during the startup manufacturing phase of new products, and we may experience failures or defects in the future. We have also experienced wind blade failures in the field. Any such customer qualification and wind blade testing failures or other product defects in the future could materially harm our existing and prospective customer relationships. Specifically, negative publicity about the quality of the wind blades we manufacture or defects in the wind blades supplied to our customers could result in a reduction in wind blade orders, increased warranty claims, product liability claims and other damages or termination of our long-term supply agreements or business relationships with current or new customers. In addition, we have recently started wind blade production at a new facility in Mexico and plan to start wind blade production at a new facility in Yangzhou, China in the first quarter of 2019 and at a new facility near Chennai, India in the first half of 2020 which may expose us to greater risk of warranty claims as these facilities ramp up to serial production levels.

We may determine that resolving potential warranty claims through a negotiated settlement may be in the best interest of the business and long-term customer relationships. Wind blades may also fail due to lightning strikes or other extreme weather, which could also result in negative publicity regarding our wind blades and wind energy in general. In addition, product defects may require costly repairs or replacement components, a change in our manufacturing processes or recall of previously manufactured wind blades, which could result in significant expense and materially harm our existing or prospective customer relationships. Further, defects or product liability claims, with or without merit, may result in negative publicity that could harm our future sales and our reputation in the industry. Any of the foregoing could materially harm our business, operating results and financial condition.

We have experienced, and could in the future experience, quality or operational issues in connection with plant construction or expansion, wind blade model transitions and wind blade manufacturing, which could result in losses and cause delays in our ability to complete our projects and may therefore materially harm our business, financial condition and results of operations.

We dedicate most of the capacity of our current wind blade manufacturing facilities to existing customers and, as a result, we may need to build additional manufacturing capacity or facilities to serve the needs of new customers or expanded needs of existing customers. Since the third quarter of 2016, we have commenced operations at three new manufacturing facilities in Mexico, one in Turkey and one in Iowa. In March 2018, we signed a lease for the construction of a new manufacturing facility in the Yangzhou Economic & Technical Development Zone in Yangzhou, China and we expect to commence operations at this facility in the first quarter of 2019. Also, in February 2019, we signed a lease 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 construction of new plants and the expansion of existing plants involves significant time, cost and other risks. We expect our plants to generate losses in their first 12 to 24 months of operations related to production startup costs. Additionally, numerous factors can contribute, and have in the past contributed, to delays or difficulties in the startup of, or the adoption of our manufacturing lines to produce larger wind blade models, which we refer to as model transitions, in our manufacturing facilities. These factors include permitting, construction or renovation delays, the engineering and fabrication of specialized equipment, the modification of our general production know-how and customer-specific manufacturing processes to address the specific wind blades to be tested and built, changing and evolving customer specifications and expectations and the hiring and training of plant personnel. If our production or the delivery by any third-party suppliers of any custom equipment is delayed, the construction or renovation of the facility, or the addition of a production line would be delayed. Any delays or difficulties in plant startup or expansion may result in cost overruns, production delays, contractual penalties, loss of revenues, reduced margins and impairment of customer relationships, which could materially harm our business, financial condition and results of operations.

Some of our long-term supply agreements with our customers are subject to early termination and our failure to perform our obligations under these agreements or the termination of these agreements would materially harm our business, financial condition and results of operation.

Our current long-term supply agreements expire between the end of the second quarter of 2020 and the end of 2023. Some of our long-term supply agreements contain provisions that allow for the early termination of these agreements upon the customer providing us with advance written notice and paying an early termination fee. Additionally, our long-term supply agreements contain provisions allowing our customers to terminate these agreements upon our failure to deliver the contracted wind blade volumes or our failure to meet certain mutually agreed upon cost reductions. Our customers may not continue to maintain long-term supply agreements with us in the future. If one or more of our customers terminate, or reduce the number of lines or fail to renew their long-term supply agreements with us, it would materially harm our business, financial condition and results of operations.

Our long-term supply agreements and our backlog are subject to reduction within contractual parameters and we may not realize all of the expected revenue.

Our current long-term wind blade supply agreements generally establish annual purchase requirements on which we rely for our future production and financial forecasts. However, the timing and volume of purchases, within certain parameters, may be subject to change by our customers. In addition, the amount of the annual purchase requirements typically decline in the later years of our long-term supply agreements. In some instances, our customers have the contractual right to require us to reduce the number of manufacturing lines committed to them and correspondingly reduce their minimum annual purchase requirements. Additionally, our minimum annual purchase commitments could potentially understate the forecasted net sales that we are likely to generate in a given period or periods if all of our long-term supply agreements remain in place and pricing remains materially unchanged. Such minimum annual purchase requirements could also potentially overstate the forecasted net sales that we are likely to generate in a given period or periods if one or more of our long-term supply agreements were to be terminated by our customers for any reason. As a result, we may not realize the forecasted net sales we expect under our long-term supply agreements or pursuant to our backlog, which we define as the value of purchase orders received less the revenue recognized to date on those purchase orders. In addition, fulfillment of our backlog may not result in profits.

Many of our long-term supply agreements contain liquidated damages provisions, which may require us to make unanticipated payments to our customers.

Many of our long-term supply agreements contain liquidated damages provisions in the event that we fail to perform our obligations thereunder in a timely manner or in accordance with the agreed terms, conditions and standards. Our liquidated damages provisions generally require us to make a payment to the customer if we fail to deliver a product or service on time. We generally try to limit our exposure under any individual long-term supply agreement to a maximum penalty. Nevertheless, if we incur liquidated damages, they may materially harm our business, operating results and financial condition.

Our wind turbine OEM customers are facing increasing competition and pricing pressure due to the increasing prevalence of auction-based tenders in wind energy markets, and correspondingly our margins and results of operations may be adversely affected.

Many governments are shifting from feed-in tariffs to auction-based tenders as a means of promoting the development and growth of renewable energy sources such as wind energy. As a result of this shift, our wind turbine OEM customers are experiencing intense pricing pressure with respect to the sale of their turbines. As a result of this pricing pressure, we will be required to further reduce the costs we incur to manufacture wind blades to remain competitive. We typically share the benefit of cost reductions related to manufacturing wind blades with our customers pursuant to the terms of our long-term supply agreements. If these pricing pressures continue, we may choose to reduce our margins or pass on a greater percentage of the savings to our OEM customers obtained from manufacturing cost reductions than required under our supply agreements to remain competitive, each of which may materially harm our business, financial condition and results of operations.

Although a majority of our manufacturing facilities are located outside the United States, our business is still heavily dependent upon the demand for wind energy in the United States and any downturn in demand for wind energy in the United States could materially harm our business.

We have developed a global footprint to serve the growing wind energy market worldwide and have wind blade manufacturing facilities in the United States, China, Mexico, Turkey and India. Although a majority of our manufacturing facilities are located outside of the United States, historically more than half of the wind blades that we produced were deployed in wind farms located within the United States. Our Iowa and Mexico manufacturing facilities manufacture wind blades that are generally deployed within the United States. In addition, we export wind blades from our China and Turkey manufacturing facilities to the United States and wind blades that will be produced at our India manufacturing facility could be exported by our customers to the United States as well. Consequently, demand for wind energy and our wind blade sales in the United States could be adversely affected by a variety of reasons and factors, and any downturn in demand for wind energy and our wind blade sales in the United States could materially harm our business.

We could experience shortages of raw materials or components critical to our manufacturing needs, which may hinder our ability to perform under our supply agreements.

We rely upon third parties for raw materials, such as fiberglass, carbon, resins, foam core and balsa wood, and various components for the wind blades we manufacture. Some of these raw materials and components may only be purchased from a limited number of suppliers. For example, balsa wood is only grown and produced in a limited number of geographies and is only available from a limited number of suppliers. Additionally, our ability to purchase the appropriate quantities of raw materials is constrained by our customers' transitioning wind blade designs and specifications. As a result, we maintain relatively low inventory and acquire raw materials and components as needed. Due to significant international demand for these raw materials from many industries, we may be unable to acquire sufficient quantities or secure a stable supply for our manufacturing needs. If shortages or delays occur, we may be unable to provide our products to our customers on time, or at all. In some instances, our customers directly control the purchase of certain key raw materials and components and if they are unable to procure and provide us with such raw materials and components, it could cause delays and disruptions with respect to our business and operations. In addition, a disruption in any aspect of our global supply chain caused by transportation delays, customs delays, cost issues or other factors could result in a shortage of raw materials or components critical to our manufacturing needs. Any supply shortages, delays in the shipment of materials or components from third party suppliers, or changes in the terms on which they are available could disrupt or materially harm our business, operating results and financial condition.

We operate in an industry characterized by changing customer demands and associated transition costs, which could materially harm our business.

The wind energy industry is competitive and is characterized by evolving customer demands. As a result, we must adapt quickly to customer requests for changes to wind blade specifications, which increases our costs and can provide periods of reduced revenue and margins. For instance, during 2018 and into 2019, we have undertaken and will undertake model transitions at several of our facilities for various customer demands. In 2018 we had 15 manufacturing lines in transition which impacted our revenue growth. We currently expect to have 10 manufacturing lines in transition during 2019 which could adversely affect our revenue growth and profitability in 2019. We are generally able to share transition costs with the customer in connection with these changing customer demands, but any sharing is the subject of negotiation and the amount is not always contractually defined. If we do not receive transition payments from our customers sufficient to cover our transition costs or lost margins, our business, financial condition and results of operations could be materially harmed.

The concentration of customers in our wind business could enable one or more of our customers to attempt to substantially influence our policies, business and affairs going forward, or adversely affect our business, financial condition or results of operations if one or more of our customers experience financial difficulties, become insolvent or file for bankruptcy.

Our dependence on six wind blade customers for substantially all of our revenues could encourage these customers to attempt to impose new or additional requirements on us that reduce the profitability of our long-term supply agreements with them or otherwise influence our policies, choice of and arrangements with raw material suppliers and other aspects of our business. Our customers could also attempt to influence the outcome of a corporate transaction if the transaction benefits a customer's competitor or is otherwise perceived as not advantageous to a customer, which could have the effect of delaying, deterring, or preventing a transaction that could benefit us. In addition, consolidation of some of our customers may result in increased customer concentration and the potential loss of customers. For example, Nordex completed its acquisition of Acciona in 2016 and Gamesa completed the merger of Siemens' Wind Power with Gamesa in 2017. Although we are not constrained by any exclusivity agreements with any of our existing wind blade customers, they may resist our development of new customer relationships, which could affect our relationships with them or our ability to secure new customers.

In addition, if one or more of our customers experience financial difficulties, demand for the wind blades we manufacture could decline significantly. In such a circumstance, we could also be at risk of collecting accounts receivable amounts owed from such customers as well as realizing the value of inventory balances for such customers. Similarly, if one or more of our customers becomes insolvent or files for bankruptcy, the demand for the wind blades we manufacture from the affected customers could be eliminated altogether. If any of our customers experience financial difficulties, they also may seek pricing concessions, extended payment terms, reduced minimum purchase commitments and other changes to the key terms of our supply agreements that could adversely affect our business, financial condition and results of operations.

Demand for the wind blades we manufacture may fluctuate for a variety of reasons, including the growth of the wind industry, and decreases in demand could materially harm our business and may not be sufficient to support our growth strategy.

Our revenues, business prospects and growth strategy heavily depend on the continued growth of the wind industry and our customers' continuing demand for wind blades. Customer demand could decrease from anticipated levels due to numerous factors outside of our control that may affect the development of the wind energy market generally, portions of the market or individual wind project developments, including:

- general economic conditions;
- the general availability and demand for electricity;
- wind energy market volatility;
- cost-effectiveness, availability and reliability of alternative sources of energy and competing methods of producing electricity, including solar and non-renewable sources such as natural gas;

- foreign, federal and state governmental subsidies and tax or regulatory policies;
- delays or cancellations of government tenders or auctions for wind energy projects;
- the availability of financing for wind development projects;
- the development of electrical transmission infrastructure and the ability to implement a proper grid connection for wind development projects;
- foreign, federal and state laws and regulations regarding avian protection plans, noise or turbine setback requirements and other environmental laws and regulations;
- administrative and legal challenges to proposed wind development projects; and
- public perception and localized community responses to wind energy projects.

In addition to factors affecting the wind energy market generally, our customers' demand may also fluctuate based on other factors beyond our control. Any decline in customer demand below anticipated levels could materially harm our revenues and operating results and could delay or impede our growth strategy.

Changes in customers' business focus and strategy could materially harm our business and results of operations.

Changes in our customers' business focus could significantly reduce their demand for wind blades. For instance, GE, the parent corporation of GE Wind, is a highly diversified company that operates in a number of different industries and could decide to devote more resources to operations outside of wind energy or cease selling wind turbines altogether. In addition, we expect that GE Wind will utilize LM for a substantial percentage of its wind blade production in the future. If any of our customers change their business focus, including a strategic shift to insource a material portion of its wind blade production requirements, it could materially harm our business and results of operations.

We have experienced in the past, and our future wind blade production could be affected by, operating problems at our facilities, which may materially harm our operating results and financial condition.

Our wind blade manufacturing processes and production capacity have in the past been, and could in the future be, disrupted by a variety of issues, including:

- production outages to conduct maintenance activities that cannot be performed safely during operations;
- prolonged power failures or reductions;
- breakdowns, failures or substandard performance of machinery and equipment;
- our inability to comply with material environmental requirements or permits;
- inadequate transportation infrastructure, including problems with railroad tracks, bridges, tunnels or roads;
- supply shortages of key raw materials and components;
- damage or production delays caused by earthquakes, fires, floods, tornadoes, hurricanes, extreme weather conditions such as windstorms, hailstorms, drought, temperature extremes, typhoons or other natural disasters or terrorism; and
- labor unrest.

The cost of repeated or prolonged interruptions, reductions in production capacity, or the repair or replacement of complex and sophisticated tooling and equipment may be considerable and could result in damages under or the termination of our long-term supply agreements or penalties for regulatory non-compliance, any of which could materially harm our business, operating results and financial condition.

We operate a substantial portion of our business in international markets and we may be unable to effectively manage a variety of currency, legal, regulatory, economic, social and political risks associated with our global operations and those in developing markets.

We currently operate manufacturing facilities in the United States, China, Mexico and Turkey, and we are expanding our operations to India to meet customer demand in India. Since 2016, we have commenced operations at three new manufacturing facilities in Mexico, one in Turkey and one in Iowa. In March 2018, we signed a lease to construct a new manufacturing facility in the Yangzhou Economic & Technical Development Zone in Yangzhou, China and we expect to commence operations at this facility in the first quarter of 2019. Also, in February 2019, we signed a lease to construct 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. For the years ended December 31, 2018, 2017 and 2016, approximately 84%, 80% and 75%, respectively, of our net sales were derived from our international operations and we expect that a substantial portion of our projected revenue growth will be derived from those operations. Our overall success depends, in part, upon our ability to succeed in differing legal, regulatory, economic, social and political conditions. The global nature of our operations is subject to a variety of risks, including:

- difficulties in staffing and managing multiple international locations;
- increased exposure to foreign currency exchange rate risk or currency exchange controls imposed by foreign countries;
- the risk of import, export and transportation regulations and tariffs on foreign trade and investment, including boycotts and embargoes;
- taxation and revenue policies or other restrictions, including royalty and tax increases, retroactive tax claims and the imposition of unexpected taxes;
- the imposition of, or rapid or unexpected adverse changes in, foreign laws, regulatory requirements or trade policies;
- restrictions on repatriation of earnings or capital or transfers of funds into or out of foreign countries;
- limited protection for intellectual property rights in some jurisdictions;
- inability to obtain adequate insurance;
- difficulty administering internal controls and legal and compliance practices in countries with different cultural norms and business practices;
- the possibility of being subjected to the jurisdiction of foreign courts in connection with legal disputes and the possible inability to subject foreign persons to the jurisdiction of courts in the United States;
- the misinterpretation of local contractual terms, renegotiation or modification of existing long-term supply agreements and enforcement of contractual terms in disputes before local courts;
- the inability to maintain or enforce legal rights and remedies at a reasonable cost or at all; and
- the potential for political unrest, expropriation, nationalization, revolution, war or acts of terrorism in countries in which we operate.

In particular, our operations in China are subject to a variety of specific risks, which may adversely affect our business, including:

- the recent imposition by the United States of proposed tariffs on wind turbines and certain wind turbine components, including wind turbine blades, being imported into the United States;
- the deterioration of the diplomatic and political relationships between the United States and China resulting from such factors as the opposition of the United States to censorship and other policies of the Chinese government, China's growing trade surpluses with the United States and the introduction by the United States of trade restrictions that would impact Chinese imports and any retaliatory measures that could ensue;

- the uncertainty of the Chinese legal regime generally, and in particular in protecting intellectual property and contractual rights, in securing future land use rights, and the recent adoption of new labor, environmental and tax laws, the impacts of which are not yet fully understood; and
- various restrictions on our ability to repatriate profits from China to other jurisdictions. See “Risk Factors—Risks Related to our Business as a Whole—We may have difficulty making distributions and repatriating earnings from our Chinese manufacturing operations, which may also occur in some of our other locations.”

We also operate in developing markets, which have, in the past, experienced, and may in the future experience, social and political unrest. For example, Turkey has experienced problems with domestic terrorist and ethnic separatist groups and attempted military coups. The issue of civil rights for Kurdish citizens remains a potential source of political instability, which may be exacerbated by continuing instability in the Middle East.

In addition, the locations of our manufacturing facilities in Juárez, Mexico and Matamoros, Mexico are, and have been in the past, subject to violence related to drug trafficking, including kidnappings and killings. This could negatively impact our ability to hire and retain personnel, especially senior U.S. managers, to continue to work at these facilities, or disrupt our operation in other ways, which could materially harm our business.

As we continue to operate our business globally, our success will depend, in part, on our ability to anticipate and effectively manage these and other related risks. We may be unsuccessful in developing and implementing policies and strategies that will be effective in managing these risks in each country where we do business or conduct operations. Our failure to manage these risks successfully could materially harm our business, operating results and financial condition.

We may not achieve the long-term growth we anticipate if wind turbine OEMs do not continue to shift from in-house production of wind blades to outsourced wind blade suppliers and if we do not expand our customer relationships and add new customers.

Many wind turbine OEMs rely on in-house production of wind blades for some or all of their wind turbines. Our growth strategy depends in large part on the continued expansion of our relationships with our current wind blade customers, and the addition of new key customers. All of our customers possess the financial, engineering and technical capabilities to produce their own wind blades and many source wind blades from multiple suppliers. Our existing customers may not expand their wind energy operations or, if they do, they may not choose us to supply them with new or additional quantities of wind blades. Our collaborative dedicated supplier model for the manufacture of wind blades is a significant departure from traditional vertically integrated methods. As is typical for rapidly evolving industries, customer demand for new business models is highly uncertain. Although we have entered into long-term supply agreements with customers that also produce wind blades for their wind turbines in-house, we may not be able to maintain these customer relationships or enter into similar arrangements with new customers that produce wind blades in-house in the future. In addition, although GE Wind historically outsourced all of their wind blade production requirements prior to its acquisition of LM, we expect that GE Wind will utilize LM for a substantial percentage of its wind blade production in the future. Our business and growth strategies depend in large part on the continuation of the trend toward outsourcing manufacturing. If that trend does not continue or we are unsuccessful in persuading wind turbine OEMs to shift from in-house production to the outsourcing of their wind blade manufacturing, we may not achieve the long-term growth we anticipate and our market share could be limited.

A drop in the price of energy sources other than wind energy, or our inability to deliver wind blades that compete with the price of other energy sources, may materially harm our business, financial condition and results of operations.

We believe that the decision to purchase wind energy is, to a significant degree, driven by the relative cost of electricity generated by wind turbines compared to the applicable price of electricity from the utility grid and the cost of traditional and other renewable energy sources. Decreases in the prices of electricity from the relevant utility grid or from renewable energy sources other than wind energy, such as solar, would harm the market for wind energy. In particular, a drop in natural gas prices could lessen the appeal of wind-generated electricity.

Technological advancements or the construction of a significant number of power generation plants, including nuclear, coal, natural gas or power plants utilizing other renewable energy technologies, government support for other forms of renewable energy or construction of additional electric transmission and distribution lines could reduce the price of electricity produced by competing methods, thereby making the purchase of wind energy less attractive. For example, in 2017, President Trump signed an executive order that is intended to promote the domestic coal industry, which may make the cost of electricity generated from coal more cost competitive. The ability of energy conservation technologies, public initiatives and government incentives to reduce electricity consumption or support other forms of renewable energy could also lead to a reduction in the price of electricity, which would undermine the attractiveness of wind energy and thus wind turbines, and, ultimately wind blades. If prices for electricity generated by wind turbines are not competitive, our business, financial condition and results of operations may be materially harmed.

If any precision molding and assembly systems needed for our manufacturing process contains a defect or is not fabricated and delivered in a timely manner, our ongoing manufacturing operations, business, financial condition and results of operation may be materially harmed.

We custom fabricate many of the precision molding and assembly systems used in our facilities. Our customers also have the option of using third-party manufacturers to produce their custom tooling. If any piece of equipment fails, is determined to produce nonconforming or defective products or is not fabricated and delivered in a timely manner, whether produced by us or a third party, our wind blade production could be interrupted and we could be subject to contractual penalties, warranty claims, loss of revenues and damage to our customer relationships, among other consequences.

The long sales cycle involved in attracting new customers may make the timing of our revenue difficult to predict and may cause our operating results to fluctuate.

The complexity, expense and long-term nature of our supply agreements generally require a lengthy customer education, evaluation and approval process. It can take us from several months to years to identify and attract new customers, if we are successful at all. This long sales cycle for attracting and retaining new customers subjects us to a number of significant risks that may materially harm our business, results of operation and financial condition over which we have limited control, including fluctuations in our quarterly operating results. In addition, we may incur substantial expenses and devote significant management effort to develop potential relationships that do not result in agreements or revenue and may prevent us from pursuing other opportunities.

We encounter intense competition for limited customers from other wind blade manufacturers, as well as in-house production by wind turbine OEMs, which may make it difficult to enter into long-term supply agreements, keep existing customers and potentially get new customers.

We face significant competition from other wind blade manufacturers, and this competition may intensify in the future. The wind turbine market is characterized by a relatively small number of large OEMs. In addition, a significant percentage of wind turbine OEMs, including most of our current customers, produce some of their own wind blades in-house. As a result, we compete for business from a limited number of customers that outsource the production of wind blades. We also compete with a number of wind blade manufacturers in China, who are growing in terms of their technical capability and aspire to expand outside of China. Many of our competitors have more experience in the wind energy industry, as well as greater financial, technical or human resources than we do, which may limit our ability to compete effectively with them and maintain or improve our market share. Additionally, our long-term supply agreements dedicate capacity at our facilities to our customers, which may also limit our ability to compete if our facilities cannot accommodate additional capacity. If we are unable to compete effectively for the limited number of customers that outsource production of wind blades, our ability to enter into long-term supply agreements with potential new and existing customers may be materially harmed.

We could be affected by increasing competition from new and existing industry participants and industry consolidation.

The markets in which we operate are increasingly competitive and any failure on our part to compete effectively on an ongoing basis could materially harm our business, results of operations or financial condition. The key factors affecting competition in the wind energy industry are the capacity and quality of products, technology, price, the ability to fulfill local market requirements and the scope, cost and location of manufacturing facilities.

Competition in the wind energy industry has intensified in recent years as a result of a number of factors, including international expansion by existing industry participants exploiting new markets, particularly as political will around the issues of global warming and the environment become more prominent to the political agenda in those new markets. There has also been increasing pressure from Asian manufacturers improving the quality and reliability of their technologies, and considering moving out of their local markets and into international cross border transactions. Western wind turbine OEMs have now started using Asian manufacturers for a portion of their wind blades. Market entry by certain large industrial groups, including those previously unconnected to the wind energy market, through acquisitions and license agreements and numerous greenfield establishments in certain markets, also poses a competition risk.

The competitive environment in the wind energy industry may become more challenging in the years ahead, particularly in the event of greater consolidation in the industry, leading to greater market power and “economies of scale” by such market players which translate into being able to offer greater “cost of energy” savings to wind power plant customers. For example, GE completed its acquisition of LM in 2017 and also acquired Alstom S.A.’s power business in 2015; Nordex completed its acquisition of Acciona in 2016 and Gamesa merged with Siemens’ Wind Power in 2017. These transactions or further consolidation in the wind energy industry may have an adverse impact on our business in the future, including, without limitation, reduced demand for our products and services, product innovation, changes in pricing and similar factors, including any competitor’s attempt to duplicate our collaborative dedicated supplier model. Such events could materially harm our business, results of operations, financial condition or prospects.

Significant increases in the prices of raw materials or components that cannot be reflected in the price of our products could negatively affect our operating margins.

The prices of our raw materials and components are subject to price fluctuations resulting from volatility of supply and demand in world markets. Under our long-term supply agreements, our customers generally commit to purchase minimum annual volumes and prices for wind blades are generally set as of the date of our supply agreements and adjusted quarterly, for the cost of raw material and our operating expenses in certain cases. As a result, the competitive nature of the wind blade market and our long-term supply agreements with our customers may delay or prevent us from passing cost increases in raw materials and components on to our customers. Significant increases in the price of raw materials or components used in our manufactured wind blades that cannot be reflected in the price of our products, could negatively affect our operating margins and materially harm our business, operating results or financial condition.

GE’s acquisition of LM Wind Power, our largest competitor, may materially harm our business, financial condition and results of operations and may cause the price of our common stock to decline.

In 2017, GE completed its acquisition of LM Wind Power, our largest competitor. By the end of 2016, we had entered into five supply agreements with GE Wind providing for the supply of wind blades from our Iowa, Mexico, Turkey and our Taicang Port, China facilities. In 2016, we entered into (i) an amended and restated supply agreement for the continued supply of wind blades from our Iowa facility through December 31, 2020, (ii) an amendment to our existing supply agreement for the continued supply of wind blades from our original Juárez, Mexico facility through December 31, 2020 and (iii) a new supply agreement with GE Wind for the supply of incremental wind blades from our second manufacturing facility in Juárez, Mexico through December 31, 2020. GE Wind elected not to renew or extend the Turkey and Taicang Port, China supply agreements, which both expired on December 31, 2017. We expect that GE Wind will utilize LM for a substantial percentage of its wind blade production in the future. As such, GE Wind may not continue to purchase wind blades from us at similar volumes or on as favorable terms in the future. In August 2018, GE Wind did agree to extend our existing supply agreement in

one of our Mexico plants by two years to 2022 and increased the number of wind blade manufacturing lines in that facility from three to five. In addition, GE Wind has agreed to transition to a larger blade model in our Newton, Iowa plant in early 2019 and to eliminate its option to terminate their supply agreement at this location prior to its December 2020 expiration. Unless otherwise terminated or renewed, our supply agreements with GE Wind are in effect until the end of 2020 for our Iowa and one of our Mexico facilities and until the end of 2022 for our other Mexico facility. GE Wind may terminate the Mexico supply agreements with no advance notice and paying us termination fees as set forth in the applicable agreement. In addition, either party may terminate these supply agreements upon a material breach by the other party which goes uncured for 30 days after written notice has been provided. If GE Wind elects to utilize LM or another supplier for more of its wind blade production, reduce the volumes of wind blades it purchases from us or terminates any of our supply agreements, it may materially harm our business, financial condition and results of operations.

Certain of our long-term supply agreements are highly dependent upon a limited number of suppliers of raw materials.

Our ability to perform under certain of our long-term supply agreements is currently, and may continue to be in the future, highly dependent on a limited number of suppliers of raw materials. For instance, our agreements with certain customers require us or our customers to purchase raw materials from a single supplier unless additional suppliers are evaluated and found to satisfy the requirements set out in those agreements. In 2015, for example, our ability to supply wind blades to one of our customers was constrained because our customer, who under our agreement was required to procure a sufficient supply of a specific type of material, was unable to procure the material from a single source supplier. Should any of these suppliers of raw materials experience production delays or shortages, have their operations interrupted or otherwise cease or curtail their operations, this may disrupt or materially harm our business, operating results and financial condition.

Significant increases in the cost of transporting the wind blades we manufacture could negatively affect the demand for our products.

A significant portion of our customers' costs relate to the costs necessary to transport the wind blades we manufacture to their customers' wind farms. Demand for our products could be negatively affected if the costs our customers bear to transport the wind blades we manufacture materially increase.

The nature of our manufacturing processes and unanticipated changes to those processes could significantly reduce our manufacturing yields and product reliability, which could materially harm our business, operating results and financial condition.

The manufacturing of our wind blades involves highly complex and precise processes which may be dictated by our customers' requests requiring production in highly controlled environments. Changes in our manufacturing processes or that are required by our customers could affect product reliability. Furthermore, many of our processes are manual to facilitate production flexibility and compliance with customer requirements. A manually dependent manufacturing process can limit capacity and increase production costs. In some cases, existing manufacturing techniques may be insufficient to achieve the volume or cost targets of our customers. For example, our manufacturing processes may at times require a quantity of raw materials greater than the quantity for which we have contracted, making it difficult for us to achieve the targeted cost levels negotiated with our customers. In order to achieve targeted volume and cost levels, we may need to increase the quantity of raw materials for which we contract or develop new manufacturing processes and techniques. While we continue to devote substantial efforts to the improvement of our manufacturing techniques and processes, we may not achieve manufacturing volumes and cost levels in our manufacturing activities that will fully satisfy customer demands, which could materially harm our business, operating results and financial condition.

Our reserves for warranty expenses might not be sufficient to cover all future costs.

We provide warranties for all of the wind blades and precision molding and assembly systems we produce, including parts and labor, for periods that typically range from two to five years depending on the product sold. If a wind blade is found to be defective during the warranty period as a result of a defect in workmanship or materials, or if we are required to cover remediation expenses or other potential remedies, in addition to our regular warranty

coverage we may need to repair or replace the wind blade (which could include significant transportation, installation and erection costs) at our sole expense. Our estimate of warranty expense requires us to make assumptions about matters that are highly uncertain, including future rates of product failure, repair costs, shipping and handling and de-installation and re-installation costs at customers' sites. Our assumptions could be materially different from the actual performance of our products and these remediation expenses in the future. The expenses associated with wind blade repair and remediation activities can be substantial and may include changes to our manufacturing processes. If our estimates prove materially incorrect, we could incur warranty expenses that exceed our reserves and be required to make material unplanned cash expenditures, which could materially harm our business, operating results and financial condition.

We may not be able to meet our customers' future wind blade supply demands, which may hinder our customer relationships and reputation.

Historically, our existing customers' demand and MW capacity goals have mirrored the anticipated growth of the wind energy industry. 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. If we are unable to maintain future manufacturing capacity at levels that meet our customers' increasing demands, including with respect to volume, technical specifications, or commercial terms, our existing customers may seek relationships with, or give priority to, other wind blade manufacturers or may use or develop their own internal manufacturing capabilities to meet their increased demand, which could materially harm our business, operating results and financial condition. In addition, our reputation could be materially harmed if we are unable to satisfy the requirements of our customers.

We rely on our research and development efforts to remain competitive, and we may fail to develop on a timely basis new wind blade manufacturing technologies that are commercially attractive or permit us to keep up with customer demands.

The market for wind blades is subject to evolving customer needs and expectations. Our research and development is invested in developing faster and more efficient manufacturing processes in order to build the new wind blades designed by our customers that more effectively capture wind energy and are adaptable to new growth segments of the wind energy market. Research and development activities are inherently uncertain and the results of our in-house research and development may not be successful. In addition, our competition may adopt more advanced technologies or develop wind blades that are more effective or commercially attractive. We believe that our future success will depend in large part upon our ability to be at the forefront of technological innovation in the wind energy industry and to rapidly and cost-effectively adapt our wind blade manufacturing processes to keep pace with changing technologies, new wind blade design and changing customer needs. If we are unable to do so, our business, operating results, financial condition and reputation could be materially harmed.

We depend on third parties for certain construction, maintenance, engineering, transportation, warehousing and logistics services, and failures of those third parties to perform their obligations may in turn impede our ability to perform our obligations.

We contract with third parties for certain services relating to the design, construction and maintenance of various components of our production facilities and other systems. If these third parties fail to comply with their obligations:

- we may experience delays in the completion of new facilities or expansion of existing facilities;
- the facilities may not operate as intended;
- we may be required to recognize impairment charges; or
- we could experience production delays, which could cause us to miss our production capacity targets and breach our long-term supply agreements, which could damage our relationships with our customers and subject us to contractual penalties and contract termination.

Any of these events could have a material adverse effect on our business, operating results or financial condition. Our customers also contract with third parties for the transportation of the products we manufacture. In particular, a significant portion of the goods we manufacture are transported to different countries, which requires customized shipping cradles, sophisticated warehousing, logistics and other resources. If our customers fail to contract with third parties for certain construction, maintenance, engineering, transportation, warehousing and logistics services, or there are any disruptions, delays or failures in these services, this could have a material adverse effect on our business, operating results or financial condition.

Various legislation, regulations and incentives that are expected to support the growth of wind energy in the United States and around the world may not be extended or may be discontinued, phased out or changed, or may not be successfully implemented, which could materially harm wind energy programs and materially decrease demand for the wind blades we manufacture.

The U.S. wind energy industry is dependent in part upon governmental support through certain incentives including federal tax incentives and RPS programs and may not be economically viable absent such incentives. Government-sponsored tax incentive programs including the PTC, and to a lesser extent, the Investment Tax Credit, are expected to support the U.S. growth of wind energy. The PTC provided the owner of a wind turbine placed in operation before January 1, 2015 with a ten year credit against its U.S. federal income tax obligations based on the amount of electricity generated by the wind turbine.

Although the PTC was extended in December 2015 for wind power projects through December 31, 2019, as currently contemplated, the PTC rate is being phased out over the term of the PTC extension. Specifically, as currently contemplated, the PTC will remain at the same rate in effect at the end of 2014 for wind power projects that commence construction by the end of 2016, and thereafter will be reduced by 20% per year in 2017, 2018 and 2019, respectively. The Tax Cuts and Jobs Act (Tax Reform) legislation preserved the PTC, which was a positive outcome for the wind industry. However, while the tax equity market continues to function, Tax Reform has created some near-term uncertainty around the amount of available tax equity financing as financial institutions fully evaluate the impacts of the new tax law.

In 2015, the EPA enacted the Clean Power Plan, which is also intended to promote the growth of renewable energy. However, in 2016, the U. S. Supreme Court issued a stay of the EPA's implementation of the Clean Power Plan until the D.C. Circuit of the U.S. Court of Appeals reviews the merits of multiple lawsuits challenging the legality of the Clean Power Plan. If the Clean Power Plan is not successfully implemented, demand for the wind blades we manufacture may be materially decreased. In addition, in 2017, President Trump signed an executive order that requires, among other things, that the EPA review the Clean Power Plan and publish a rule to either suspend, revise or rescind it.

In addition, many state governments have adopted measures designed to promote wind energy. For example, according to the American Wind Energy Association (AWEA), at the state level, as of December 31, 2018, 29 states, as well as the District of Columbia and Puerto Rico, have implemented RPS programs that mandate that a specific percentage of electricity sales in a state come from renewable energy within a specified period. However, some RPS programs have been challenged and all of them may not continue going forward. These programs have spurred significant growth in the wind energy industry in the United States and a corresponding increase in the demand for our manufactured wind blades. However, although the U.S. government and several state governments have adopted these various programs that are expected to help drive the growth of wind energy, they may approve new or additional programs that might hinder the wind energy industry and therefore negatively impact our business, operating results or financial condition.

China is implementing its 13th 5-Year Plan with a goal of 15% energy from non-fossil fuel sources and targeting 210 GWs of grid-connected wind capacity by 2020, according to its National Development and Reform Commission, and employs preferential feed-in tariff schemes, in addition to local tax-based incentives. Mexico has established strict targets, aiming for 35% renewable energy by 2024 and 50% by 2050, according to WoodMac, which it is facilitating through tax incentives. Large European Union members have renewable energy targets for 2020 of between 13% and 49% of all energy use derived from renewable energy sources, according to WoodMac. Turkey enacted Law No. 5346 in 2005 to promote renewable-based electricity generation within its domestic electricity market by introducing tariffs and purchase obligations for distribution companies requiring purchases

from certified renewable energy producers. The World Bank also provided to Turkey an aggregate of \$600 million of loan proceeds to encourage investors to construct generation plants with renewable energy resources. These programs have spurred significant growth in the wind energy industry internationally and a corresponding increase in the demand for our manufactured wind blades. However, although foreign governments have adopted various programs that are expected to drive the growth of wind energy, they may approve new or additional programs going forward that might hinder the wind energy industry and therefore negatively impact our business as a result. For example, foreign governments may decide to reduce or eliminate these economic incentives for political, financial or other reasons. They may also favor other forms of energy, including current and new sources of energy such as solar, nuclear and hydropower. Foreign governments may also cancel or delay scheduled tender offers or auctions for wind energy projects. For example, the Mexican government recently canceled the country's fourth energy tender which was in the final stages to contract a minimum 5% of national power by 2021.

Because of the long lead times necessary to develop wind energy projects, any uncertainty or delay in adopting, extending or renewing these incentives beyond their current or future expiration dates could negatively impact potential wind energy installations and result in industry volatility. There can be no assurance that the PTC, the Clean Power Plan, tender offers, auctions or other governmental programs or subsidies for renewable energy will remain in effect in their present form or at all, and the elimination, reduction, or modification of these programs or subsidies could materially harm wind energy programs in the United States and international markets and materially decrease demand for the wind blades we manufacture and, in turn, materially harm our business, operating results and financial condition.

We may not be able to obtain, or agree on acceptable terms and conditions for, government tax credits, grants, loans and other incentives for which we have in the past applied or may in the future apply, which may materially harm our business, operating results and financial condition.

We have in the past and may in the future rely, in part, on tax credits, grants, loans and other incentives under U.S. and foreign governmental programs to support the construction of new plants and expansion of existing manufacturing facilities. We may not be successful in obtaining these tax credits, grants, loans and other incentives, and the tax and other incentives that have already been approved may not be continued in the future. Our ability to obtain funds or incentives from government sources is subject to the availability of funds under applicable governmental programs and approval of our applications to participate in these programs. The application process for these funds and other incentives is and will be highly competitive. We may not be able to satisfy the requirements and milestones imposed by the granting authority as conditions to receipt of the funds or other incentives, the timing of the receipt of the funds may not meet our needs, and, even if obtained, we may be unable to successfully execute on our business plan. Moreover, not all of the terms and conditions associated with these incentive funds have been disclosed to us, and once disclosed, there may be terms and conditions with which we are unable to comply or that are commercially unacceptable to us. Further, participation in certain programs may require us to notify the federal government of certain intellectual property we develop and comply with applicable regulations in order to protect our interests in that intellectual property. In addition, these federal governmental programs may require us to spend a portion of our own funds for every incentive dollar we receive or are permitted to borrow from the government and may impose time limits during which we must use the funds awarded to us that we may be unable to achieve. If we are unable to obtain or comply with the terms of these tax credits, grants, loans or other incentives, our business, operating results and financial condition may be harmed.

Adverse weather conditions could impact the wind energy industry in some regions and could materially harm our business, operating results and financial condition.

Our business may be subject to fluctuations in sales volumes due to adverse weather conditions that could delay the erection of wind turbines, the installation of wind blades and the ability of wind turbines to generate electricity efficiently. Moreover, any remediation efforts we could be required to undertake pursuant to wind blade warranties could be delayed or otherwise adversely impacted by poor weather. Although our customer base and manufacturing footprint is geographically diversified, enduring weather patterns or seasonal variations may impact the expansion of the wind energy industry in certain regions. A resulting reduction or delay in demand for the wind blades we manufacture for our customers could materially harm our business, operating results and financial condition.

Our long-term growth and success is dependent upon retaining our senior management and attracting and retaining qualified personnel.

Our growth and success depends to a significant extent on our ability to attract and retain highly qualified research and development, management, manufacturing, marketing and other key personnel including engineers in our various locations. In addition, we rely heavily on our management team, including Steven C. Lockard, our Chief Executive Officer; Joseph G. Kishkill, our Chief Commercial Officer; William E. Siwek, our Chief Financial Officer; and other senior management. The inability to recruit and retain key personnel or the unexpected loss of key personnel may materially harm our business, operating results and financial condition. Hiring those persons may be especially difficult because of the specialized nature of our business and our international operations. If we cannot attract and retain qualified personnel, or if we lose the services of Messrs. Lockard, Kishkill or Siwek, other key members of senior management or other key personnel, our ability to successfully execute our business plan, market and develop our products and serve our customers could be materially and adversely affected. In addition, because of our reliance on our management team, our future success depends, in part, on its ability to identify and develop talent to succeed its senior management. The retention of key personnel and appropriate senior management succession planning will continue to be critical to the successful implementation of our future strategies.

Risks Related to our Transportation Business

Our efforts to expand our transportation business and enter into other strategic markets may not be successful.

While our primary focus has been to manufacture composite wind blades, our strategy is to expand our transportation business and to enter into other strategic markets. In 2018, we expanded our relationship with Proterra and began supplying bus bodies from a new manufacturing facility in Newton, Iowa in addition to our manufacturing facility in Warren, Rhode Island. We experienced start up challenges in connection with the supply of bus bodies to Proterra from our Newton, Iowa manufacturing facility. The expansion of our transportation business and our entry into other strategic markets will require improved execution in terms of our start up activity and ongoing manufacturing performance as well as significant levels of investment. There can be no assurance that our transportation business or other strategic markets will develop as anticipated or that we will have success in any such markets, and if we do not, we may be unable to recover our investment, which could adversely impact our business, financial condition and results of operations, including potentially impairing the value of our goodwill.

We may incur material losses and costs as a result of product liability and warranty claims, litigation and other disputes and claims.

We are exposed to warranty and product liability claims if our transportation products fail to perform as expected. We may in the future be required to participate in a recall of these products or the vehicles incorporating our products. If public safety concerns are raised, we may have to participate in a recall even if our products are ultimately found not to be defective. Vehicle manufacturers have experienced increasing recall campaigns in recent years. Our customers may look to us for contribution when faced with recalls and product liability claims. If our customers demand higher warranty-related cost recoveries, or if our transportation products fail to perform as expected, our business, financial condition and results of operations could materially suffer.

We may also be exposed to product liability claims, warranty claims and damage to our reputation if our transportation products actually or allegedly fail to perform as expected or the use of our products results, or is alleged to result, in bodily injury or property damage. Recalls may also cause us to lose additional business from our customers. Material product defect issues may subject us to recalls of those products and restrictions on bidding on new customer programs.

Risks Related to Our Business as a Whole

We may not be able to manage our future growth effectively, which may materially harm our business, operating results and financial condition.

We expect to continue to expand our business significantly to meet our current and expected future contractual obligations and to satisfy anticipated increased demand for our products. To manage our anticipated expansion, we believe we must scale our internal infrastructure, including establishing additional facilities, improve our operational systems and procedures and manufacturing capabilities, continue to enhance our compliance and quality assurance systems, train and manage our growing employee base, and retain and add to our current executives and

management personnel. Rapid expansion of our operations could place a significant strain on our senior management team, support teams, manufacturing lines, information technology platforms and other resources. Difficulties in effectively managing the budgeting, forecasting and other process control issues presented by any rapid expansion could materially harm our business, prospects, results of operations or financial condition. Our inability to implement operational improvements, generate and sustain increased revenue and manage and control our cost of goods sold and operating expenses could impede our future growth and materially harm our business, operating results and financial condition.

Our financial position, revenue, operating results and profitability are difficult to predict and may vary from quarter to quarter, which could cause our share price to decline significantly.

Our quarterly revenue, operating results and profitability have varied in the past and are likely to vary significantly from quarter to quarter in the future. For example, our quarterly results have ranged from an operating profit of \$21.0 million for the three months ended September 30, 2017 to an operating loss of \$3.6 million for the three months ended December 31, 2018. The factors that are likely to cause these variations include:

- operating and startup costs of new manufacturing facilities;
- wind blade model transitions;
- differing quantities of wind blade production;
- unanticipated contract or project delays or terminations;
- changes in the costs of raw materials or disruptions in raw material supply;
- scrap of defective products;
- warranty expense;
- availability of qualified personnel;
- employee wage levels;
- costs incurred in the expansion of our existing manufacturing capacity;
- volume reduction requests from our customers pursuant to our customer agreements;
- general economic conditions; and
- the complexity of the financial assumptions we must use for forecasting our revenue, profitability and operating results under ASU 2014-09, *Revenue from Contracts with Customers* (Topic 606), the recently enacted new accounting standard for revenue recognition and the impact that unanticipated blade transitions have on those estimates.

As a result, our revenue, operating results and profitability for a particular period are difficult to predict and may decline in comparison to corresponding prior periods regardless of the strength of our business. It is also possible that in some future periods our revenue, operating results and profitability may not meet the expectations of securities analysts or investors. If this occurs, the trading price of our common stock could fall substantially, either suddenly or over time, and our business, operating results and financial condition would be materially harmed.

The fluctuation of foreign currency exchange rates could materially harm our financial results.

Since we conduct a significant portion of our operations internationally, our business is subject to foreign currency risks, including currency exchange rate fluctuations. The exchange rates are affected by, among other things, changes in political and economic conditions. For example, an increase in our Turkey sales and operations will result in a larger portion of our net sales and expenditures being denominated in the Euro and Turkish Lira. Significant fluctuations in the exchange rate between the Turkish Lira and the U.S. dollar, the Turkish Lira and the Euro or the Euro and the U.S. dollar may adversely affect our revenue, expenses, as well as the value of our assets and liabilities. Similarly, an increase in our sales within China may result in a larger portion of our net sales and expenditures being denominated in Chinese Renminbi. The Chinese government controls the procedures by which

the Chinese Renminbi is converted into other currencies, and conversion of the Chinese Renminbi generally requires government consent. As a result, the Chinese Renminbi may not be freely convertible into other currencies at all times. If the Chinese government institutes changes in currency conversion procedures, or imposes restrictions on currency conversion, those actions may materially harm our business, liquidity, financial condition and operating results. In addition, significant fluctuations in the exchange rate between the Chinese Renminbi and U.S. dollars may adversely affect our revenues, expenses as well as the value of our assets and liabilities. However, in Mexico, since all of our net sales and some of our expenditures are denominated in U.S. dollars, an increase in our Mexico sales and operations will result in a larger portion of our cost of goods sold being denominated in the Mexican Peso. Significant fluctuations in the exchange rate between the Mexican Peso and the U.S. dollar may adversely affect our expenses, as well as the value of our assets and liabilities. To the extent our future revenues and expenses are generated outside of the United States in currencies other than the U.S. dollar, including the Euro, the Turkish Lira, the Chinese Renminbi, Mexican Peso or India Rupee, among others, we will be subject to increased risks relating to foreign currency exchange rate fluctuations which could materially harm our business, financial condition and operating results.

Our manufacturing operations and future growth are dependent upon the availability of capital, which may be insufficient to support our capital expenditures.

Our current wind blade manufacturing activities and future growth will require substantial capital investment. For the years ended December 31, 2018 and 2017, our capital expenditures were \$74.7 million and \$51.0 million, respectively, including assets acquired under capital lease in 2018 and 2017 of \$22.0 million and \$6.2 million, respectively. We have recently entered into lease agreements with third parties to lease new manufacturing facilities in China, India and Mexico. Major projects expected to be undertaken include purchasing equipment for our new manufacturing facilities in Yangzhou, China, Chennai, India, Matamoros, Mexico and Juarez, Mexico, and the expansion of our Mexico and Turkey facilities as well as costs to enhance our information technology systems. Our ability to grow our business is predicated upon us making significant additional capital investments to expand our existing manufacturing facilities and build and operate new manufacturing facilities in existing and new markets. We generally estimate that the startup of a new six-line manufacturing facility requires cash for net operating expenses and working capital of between \$20 million to \$25 million and additional capital expenditures primarily for machinery and equipment of between \$30 million to \$35 million. In addition, we estimate our annual maintenance capital expenditures to be between \$1.0 million to \$2.0 million per facility. We may not have the capital to undertake these capital investments. In addition, our capital expenditures may be significantly higher if our estimates of future capital investments are incorrect and may increase substantially if we are required to undertake actions to comply with new regulatory requirements or compete with new technologies. The cost of some projects may also be affected by foreign exchange rates if any raw materials or other goods must be paid for in foreign currency. We cannot assure you that we will be able to raise funds on favorable terms, if at all, or that future financings would not be dilutive to holders of our capital stock. We also cannot assure you that completed capital expenditures will yield the anticipated results. If we raise additional funds by obtaining loans from third parties, the terms of those financing arrangements may include negative covenants, or other restrictions on our business that could impair our operational flexibility, and would require us to fund additional interest expense. If we are unable to obtain sufficient capital at a reasonable cost or at all, we may not be able to expand production sufficiently to take advantage of changes in the marketplace or may be required to delay, reduce or eliminate some or all of our current operations, which could materially harm our business, operating results and financial condition.

As a U.S. corporation with international operations, we are subject to the U.S. Foreign Corrupt Practices Act of 1977, which could impact our ability to compete in certain jurisdictions.

As a U.S. corporation, we are subject to the FCPA, which generally prohibits U.S. companies and their intermediaries from making improper payments to foreign officials for the purpose of obtaining or keeping business. We have or will soon have manufacturing facilities in China, Mexico, Turkey and India, countries with a fairly high risk of corruption. Those facilities are subject to routine government oversight. In addition, a number of our raw materials and components suppliers are state-owned in China. Moreover, due to our need to import raw materials across international borders, we also routinely have interactions, directly or indirectly, with customs officials. In many foreign countries, under local custom, businesses engage in practices that may be prohibited by the FCPA or other similar laws and regulations. Additionally, we continue to hire employees around the world as we continue to expand. Although we have implemented certain procedures and controls designed to ensure compliance with the

FCPA and similar laws, there can be no guarantee that all of our employees and agents, as well as those companies to which we outsource certain of our business operations, have not taken and will not take actions that violate our policies and the FCPA, which could subject us to fines, penalties, disgorgement, and loss of business, harm our reputation and impact our ability to compete in certain jurisdictions. In addition, these laws are complex and far-reaching in nature, and, as a result, we may be required in the future to alter one or more of our practices to be in compliance with these laws or any changes in these laws or the interpretation thereof. Moreover, our competitors may not be subject to the FCPA or comparable legislation, which could provide them with a competitive advantage in some jurisdictions.

We may have difficulty making distributions and repatriating earnings from our Chinese manufacturing operations, which may also occur in some of our other locations.

A material portion of our business is conducted in China. As of December 31, 2018, our China operations had unrestricted cash of \$28.9 million, most of which will be used to fund our future operations in China. 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 contracts 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) 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, we 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. Any inability to make distributions, repatriate earnings or otherwise access funds from our manufacturing operations in China, if and when needed for use outside of China, could materially harm our liquidity and our business.

Effective internal controls are necessary for us to provide reliable financial reports and effectively address fraud risks.

We maintain a system of internal controls to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles (GAAP). The process of designing and implementing effective internal controls is a continuous effort that requires us to anticipate and react to changes in our business and the economic and regulatory environments and to expend significant resources to establish and maintain a system of internal controls that will be adequate to satisfy the reporting obligations of a public company. The effectiveness of our internal controls depends in part on the cooperation of senior managers worldwide.

Any system of controls, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system are met. Any failure to maintain that system, or consequent inability to produce accurate financial statements on a timely basis, could increase our operating costs and harm our business, and lead to our becoming subject to litigation, sanctions or investigations by The NASDAQ Global Market (NASDAQ), the SEC or other regulatory governmental agencies and bodies. Furthermore, investors' perceptions that our internal controls are inadequate or that we are unable to produce accurate financial statements on a timely basis may harm our stock price.

We have in the past experienced material weaknesses. While we have successfully remediated those material weaknesses, we could experience control deficiencies in the future or identify areas requiring improvement in our internal control over financial reporting.

The state of financial markets and the economy may materially harm our sources of liquidity and capital.

There has been significant recent turmoil and volatility in worldwide financial markets. These conditions have resulted in a disruption in the liquidity of financial markets, and could directly impact us to the extent we need to access capital markets to raise funds to support our business and overall liquidity position. This situation could affect the cost of such funds or our ability to raise such funds. If we were unable to access any of these funding sources when needed, it could materially harm our business, operating results and financial condition.

Our ability to use our net operating loss carry forwards may be subject to limitation and may result in increased future tax liability.

Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the Code), contain rules that limit the ability of a company that undergoes an “ownership change” to utilize its net operating loss and tax credit carry forwards and certain built-in losses recognized in years after the “ownership change”. An “ownership change” is generally defined as any change in ownership of more than 50% of a corporation’s stock over a rolling three-year period by stockholders that own (directly or indirectly) 5% or more of the stock of a corporation, or arising from a new issuance of stock by a corporation. If an ownership change occurs, Section 382 generally imposes an annual limitation on the use of pre-ownership change net operating losses (NOLs), credits and certain other tax attributes to offset taxable income earned after the ownership change. The annual limitation is equal to the product of the applicable long-term tax exempt rate and the value of our common stock immediately before the ownership change. This annual limitation may be adjusted to reflect any unused annual limitation for prior years and certain recognized built-in gains and losses for the year. In addition, Section 383 generally limits the amount of tax liability in any post-ownership change year that can be reduced by pre-ownership change tax credit carryforwards. This could result in increased U.S. federal income tax liability for us if we generate taxable income in a future period. Limitations on the use of NOLs and other tax attributes could also increase our state tax liability. The use of our tax attributes will also be limited to the extent that we do not generate positive taxable income in future tax periods. As a result of these limitations, we may be unable to offset future taxable income (if any) with losses, or our tax liability with credits, before such losses and credits expire. Accordingly, these limitations may increase our federal income tax liability.

We experienced an “ownership change” in June 2018, and it remains possible that future transactions may cause us to undergo one or more ownership changes. As of December 31, 2018, we have U.S. federal NOLs of approximately \$25.8 million and state NOLs of approximately \$118.5 million. The pre-ownership change NOLs existing at the date of change of \$47.7 million are subject to annual limitation. 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 change.

We have U.S. federal and state NOLs. In general, NOLs in one country cannot be used to offset income in any other country and NOLs in one state cannot be used to offset income in any other state. Accordingly, we may be subject to tax in certain jurisdictions even if we have unused NOLs in other jurisdictions. Also, each jurisdiction in which we operate may have its own limitations on our ability to utilize NOLs or tax credit carryovers generated in that jurisdiction. These limitations may increase our federal, state, and/or foreign income tax liability.

Comprehensive tax reform legislation could adversely affect our business, operating results and financial condition.

On December 22, 2017, President Trump signed into law Tax Reform, which significantly revised U.S. tax law by, among other things, lowering the statutory federal corporate income tax rate from 35% to 21% for tax years beginning after December 31, 2017, eliminating certain deductions, imposing a mandatory one-time transition tax on certain accumulated earnings and profits of foreign corporate subsidiaries (the Transition Tax), introducing new tax regimes, and changing how foreign earnings are subject to U.S. tax. Tax Reform also includes many new provisions, such as changes to bonus depreciation, changes to deductions for executive compensation, interest expense limitations, net operating loss deduction limitations, a tax on global intangible low-taxed income (GILTI) earned by foreign corporate subsidiaries, a base erosion anti-abuse tax (BEAT), and a deduction for foreign-derived intangible income (FDII).

At December 31, 2018, we completed the accounting for the enactment-date income tax effects of Tax Reform, which resulted in an immaterial impact to our financial statements. Upon further analyses of certain aspects of Tax Reform, and refinement of calculations during 2018, we increased our provisional amount of previously untaxed foreign earnings by \$13.8 million to \$88.1 million. This resulted in no change to U.S. federal income tax expense due to the impact of foreign tax credits. In addition, the provisional net tax expense, which was estimated to be approximately \$0.1 million, primarily attributable to the reduction in the federal tax rate, was unchanged. In addition, we have made a policy election to account for any impacts of GILTI tax in the period in which it is incurred.

Our current revolving credit facility with JPMorgan Chase Bank, N.A. Wells Fargo Bank, N.A., Capital One, N.A. and Bank of America N.A. contains, and any future loan agreements we may enter into may contain, operating and financial covenants that may restrict our business and financing activities.

We have a \$150.0 million revolving credit facility (the Credit Facility) with JPMorgan Chase Bank, N.A. Wells Fargo Bank, N.A., Capital One, N.A. and Bank of America N.A., consisting of a \$125.0 million revolving credit facility and a \$25.0 million letter of credit sub-facility. As of December 31, 2018, the aggregate outstanding balance under the Credit Facility was \$90.4 million. The Credit Facility is secured by substantially all of our assets. In addition, from time to time, we enter into various loan, working capital and accounts receivable financing facilities to finance the construction and ongoing operations of our advanced manufacturing facilities and other capital expenditures. The Credit Facility contains various financial covenants and restrictions on our and our operating subsidiaries' excess cash flows and ability to make capital expenditures, incur additional indebtedness and pay dividends or make distributions on, or repurchase, our stock. The operating and financial restrictions and covenants of the Credit Facility, as well as our other existing and any future financing agreements that we may enter into, may restrict our ability to finance our operations, engage in business activities or expand or fully pursue our business strategies. Our ability to comply with these covenants may be affected by events beyond our control, and we may not be able to maintain appropriate minimum leverage ratio and fixed charge coverage ratio requirements in the future. A breach of any of these covenants could result in a default under the applicable loan facility, which could cause all of the outstanding indebtedness under such facility to become immediately due and payable by us and/or enable the lender to terminate all commitments to extend further credit. In addition, if we were unable to repay the outstanding indebtedness upon a default, our lenders could proceed against the assets pledged as collateral to secure that indebtedness.

Our indebtedness may adversely affect our business, results of operations and financial condition.

Our indebtedness could adversely affect our business, results of operations and financial condition by, among other things:

- requiring us to dedicate a substantial portion of our cash flow from operations to pay principal and interest on our debt, which would reduce the availability of our cash flow to fund working capital, capital expenditures, acquisitions, execution of our growth strategy and other general corporate purposes;
- limiting our ability to borrow additional amounts to fund debt service requirements, working capital, capital expenditures, acquisitions, execution of our growth strategy and other general corporate purposes;
- making us more vulnerable to adverse changes in general economic, industry and regulatory conditions and in our business by limiting our flexibility in planning for, and making it more difficult to react quickly to, changing conditions;
- placing us at a competitive disadvantage compared with those of our competitors that have less debt and lower debt service requirements;
- making us more vulnerable to increases in interest rates since some of our indebtedness is subject to variable rates of interest; and
- making it more difficult for us to satisfy our financial obligations.

In addition, we may not be able to generate sufficient cash flow from our operations to repay our outstanding indebtedness when it becomes due and to meet our other cash needs or to comply with the financial covenants set forth therein. If we are not able to pay our debts as they become due, we could be in default of the Credit Facility or other indebtedness. We might also be required to pursue one or more alternative strategies to repay indebtedness, such as selling assets, refinancing or restructuring our indebtedness or selling additional debt or equity securities. We may not be able to refinance our debt or sell additional debt or equity securities or our assets on favorable terms, if at all, and if we must sell assets, it may negatively affect our ability to generate revenues.

Much of our intellectual property consists of trade secrets and know-how that is very difficult to protect. If we experience loss of protection for our trade secrets or know-how, our business would be substantially harmed.

We have a variety of intellectual property rights, including patents, trademarks and copyrights, but much of our most important intellectual property rights consists of trade secrets and know-how and effective intellectual property protection may be unavailable, limited or outside the scope of the intellectual property rights we pursue in the United States and in foreign countries such as China where we operate. Although we strive to protect our intellectual property rights, there is always a risk that our trade secrets or know-how will be compromised or that a competitor could lawfully reverse-engineer our technology or independently develop similar or more efficient technology. We have confidentiality agreements with each of our customers, suppliers, key employees and independent contractors in place to protect our intellectual property rights, but it is possible that a customer, supplier, employee or contractor might breach the agreement, intentionally or unintentionally. For example, we believe a key former employee may have shared some of our intellectual property with a competitor in China and this former employee or the competitor may use this intellectual property to compete with us in the future. It is also possible that our confidentiality agreements with customers, suppliers, employees and contractors will not be effective in preserving the confidential nature of our intellectual property rights. The patents we own could be challenged, invalidated, narrowed or circumvented by others and may not be of sufficient scope or strength to provide us with any meaningful protection or commercial advantage. Once our patents expire, or if they are invalidated, narrowed or circumvented, our competitors may be able to utilize the inventions protected by our patents. Additionally, the existence of our intellectual property rights does not guarantee that we will be successful in any attempt to enforce these rights against third parties in the event of infringement, misappropriation or other misuse, which may materially and adversely affect our business. Because our ability to effectively compete in our industry depends upon our ability to protect our proprietary technology, we might lose business to competitors and our business, revenue, operating results and prospects could be materially harmed if we suffer loss of trade secret and know-how protection or breach of our confidentiality agreements.

If the transfer pricing arrangements we have among our subsidiaries are determined to be inappropriate in one or more jurisdictions, our tax liability may increase.

In many countries, including the United States, we are subject to transfer pricing and other tax regulations designed to ensure that appropriate levels of income are reported as earned in each jurisdiction in which we operate. These regulations require that any international transaction involving associated enterprises be on substantially the same basis as a transaction between unrelated companies dealing at arms' length and that contemporaneous documentation be maintained to support the transfer prices. We have transfer pricing arrangements among our subsidiaries in relation to various aspects of our business. We consider the transactions among our subsidiaries to be substantially on arm's-length terms. If, however, a tax authority in any jurisdiction reviews any of our tax returns and determines that the transfer prices and terms we have applied are not appropriate, or that other income of our affiliates should be taxed in that jurisdiction, we may incur increased tax liability, including accrued interest and penalties, which would cause our tax provision to increase, possibly materially. In addition, if the jurisdiction from which the income is reallocated does not agree with the reallocation, both jurisdictions could tax the same income, resulting in double taxation. If tax authorities were to allocate income to a higher tax jurisdiction, subject our income to double taxation, or assess interest and penalties, it would increase our consolidated tax liability, which could materially harm our business, operating results and financial condition.

Our insurance coverage may not cover all risks we face and insurance premiums may increase, which may hinder our ability to maintain sufficient coverage to cover losses we may incur.

We are exposed to risks inherent in the manufacturing of wind blades and other composite structures as well as the construction of our facilities, such as natural disasters, breakdowns and manufacturing defects that could harm persons and damage property. We maintain insurance coverage with licensed insurance carriers that limits our aggregate exposure to certain types of catastrophic losses. In addition, we self-insure for a portion of our claims exposure resulting from workers' compensation and certain events of general liability. We accrue currently for estimated incurred losses and expenses, and periodically evaluate and adjust our claims accrued liability amount to reflect our experience. However, our insurance coverage may not be sufficient to cover the full amount of potential losses. In addition, there are some types of losses such as from warranty, hurricanes, terrorism, wars, or earthquakes where insurance is limited and/or not economically justifiable. If we were to sustain a serious uninsured loss or a loss exceeding the limits of our insurance policies, the resulting costs could have a material adverse effect on our business prospects, results of operations and financial condition. Further, our insurance policies provide for our premiums to be adjusted annually. If the premiums we pay for our policies increase significantly, we may be unable to maintain the same level of coverage we currently carry, or we will incur significantly greater costs to maintain the same level of coverage, including through higher deductibles.

We may be subject to significant liabilities and costs relating to environmental and health and safety requirements.

We are subject to various environmental, health and safety laws, regulations and permit requirements in the jurisdictions in which we operate governing, among other things, health, safety, pollution and protection of the environment and natural resources, the handling and use of hazardous substances, the generation, storage, treatment and disposal of wastes, and the cleanup of any contaminated sites. 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. A hearing date has been set for June 2019 and the matter remains pending.

We have incurred, and expect to continue to incur, capital and operating expenditures to comply with such laws, regulations and permit requirements. While we believe that we currently are in material compliance with all such laws, regulations and permit requirements, any noncompliance may subject us to a range of enforcement measures, including the imposition of monetary fines and penalties, other civil or criminal sanctions, remedial obligations, and the issuance of compliance requirements restricting our operations. In addition, the future adoption of more stringent laws, regulations and permit requirements may require us to make additional capital and operating expenditures. Under certain environmental laws and regulations, liabilities also can be imposed for cleanup of currently and formerly owned, leased or operated properties, or properties to which we sent hazardous substances or wastes, regardless of whether we directly caused the contamination or violated any law. For example, we could have future liability relating to any contamination that remains from historic industrial operations by others at our properties. Additionally, some of our facilities have a long history of industrial operations and, in the past, contaminants have been detected and remediated at one of our facilities in Izmir, Turkey.

There can be no assurance that we will not in the future become subject to compliance requirements, obligations to undertake cleanup or related activities, or claims or proceedings relating to environmental, health or safety matters, hazardous substances or wastes, contaminated sites, or other environmental or natural resource damages, that could impose significant liabilities and costs on us and materially harm our business, operating results or financial condition.

Claims that we infringe, misappropriate or otherwise misuse the intellectual property rights of others could subject us to significant liability and disrupt our business.

Our competitors and third party suppliers of components and raw materials used in our products protect their intellectual property rights by means such as trade secrets and patents. In the future we may be sued for violations of other parties' intellectual property rights, and the risk of this type of lawsuit will likely increase as our size, geographic presence and market share expand and as the number of competitors in our market increases. Any such claims or litigation, whether meritorious or not, could:

- be time-consuming and expensive to defend;
- divert the attention of our technical and managerial resources;
- adversely affect our relationships with current or future customers;
- require us to enter into royalty or licensing agreements with third parties, which may not be available on terms that we deem acceptable;
- prevent us from operating all or a portion of our business or force us to redesign our manufacturing processes or products, which could be difficult, time-consuming and expensive;
- limit the supply or increase the cost of key raw materials and components used in our products;
- subject us to significant liability for damages or result in significant settlement payments; and
- require us to indemnify our customers or suppliers.

Any of the foregoing could disrupt our business and materially harm our operating results and financial condition. In addition, intellectual property disputes have in the past arisen between our customers which negatively affected such customers' demand for wind blades manufactured by us. If such intellectual property disputes involving, or between, one or more of our customers should arise in the future, our business could be materially harmed.

We may form joint ventures, or acquire businesses or assets, in the future, and we may not realize the benefits of those transactions.

We have, in the past, entered into joint ventures with third parties for the manufacture of wind blades. For example, we entered into joint ventures with third parties in both our Mexico and Turkey locations. We may create new or additional joint ventures with third parties, or acquire businesses or assets, in the future that we believe will complement or augment our existing business. We cannot assure you that, following any such joint venture or acquisition, we will achieve the expected synergies to justify the transaction. We may encounter numerous difficulties in manufacturing any new products resulting from a joint venture or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. If we enter into joint ventures or acquire businesses or assets with respect to promising markets, we may not be able to realize the benefit of those joint ventures or acquired businesses assets if we are unable to successfully integrate them with our existing operations and company culture.

Work disruptions resulting from our collective bargaining agreements could result in increased operating costs and materially harm our business, operating results and financial condition.

Certain of our employees in Turkey and Matamoros, Mexico, which in the aggregate represented approximately 35% of our workforce as of December 31, 2018, are covered by collective bargaining arrangements. In 2016, we entered into a three-year collective bargaining agreement with certain of our Turkish employees at our first Turkey facility. The agreement resulted in an average increase in pay of approximately 20% for employees covered by the agreement. In addition, beginning in 2017, these collective bargaining arrangements also covered similarly situated employees at our second Turkey facility. In March 2018, we entered into a collective bargaining agreement with a labor union for certain of our employees in our Matamoros, Mexico facility. In January 2019, thousands of workers employed in dozens of manufacturing facilities in Matamoros, Mexico, went on strike. In general, these workers, who were represented by several different labor unions, demanded a twenty percent increase

in their wage rate and an annual bonus of approximately \$1,700. On February 15, 2019, our manufacturing production employees in Matamoros, Mexico, who are represented by a labor union, went on strike also demanding a 20% increase in their hourly wage rate and the payment of an annual bonus of approximately \$1,700 even though our collective bargaining agreement does not provide for an annual bonus. During this strike, our Matamoros manufacturing facility stopped production from February 15, 2019 until March 2, 2019. On March 2, 2019, we reached an agreement with the labor union to end the strike and we reopened our Matamoros manufacturing facility on March 3, 2019.

Additionally, our other employees working at other manufacturing facilities may vote to be represented by a labor union in the future. There can be no assurance that we will not experience labor disruptions such as work stoppages or other slowdowns by workers at any of our facilities. Should significant industrial action, threats of strikes or related disturbances occur, we could experience further disruptions of operations and increased labor costs in Turkey, Mexico or other locations, which could materially harm our business, operating results or financial condition. Any such work stoppage or slow-down at any of our facilities could also result in additional expenses and possible loss of revenue for us.

Our information technology infrastructure could experience serious failures or disruptions, the failure of which could materially harm our business, operating results and financial condition.

Information technology is part of our business strategy and operations. It enables us to streamline operation processes, facilitate the collection and reporting of business data, and provide for internal and external communications. There are risks that information technology system failures, network disruptions and breaches of data security could disrupt our operations. Any significant disruption or breach may materially harm our business, operating results or financial condition.

We will incur significant increased costs as a result of operating as a public company, and our management will be required to devote substantial time to compliance initiatives.

As a public company, we incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes-Oxley Act, as well as rules subsequently implemented by the SEC and NASDAQ, impose various requirements on public companies, including requiring establishment and maintenance of effective disclosure controls and internal control over financial reporting and changes in corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance. We estimate that we will incur approximately \$3.0 million to \$4.0 million in expenses annually in response to these requirements.

Section 404(a) of the Sarbanes-Oxley Act requires annual management assessments of the effectiveness of our internal control over financial reporting, starting with the second annual report that we file with the SEC. However, as long as we remain an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012 (the JOBS Act), we intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act. We will take advantage of these reporting exemptions until we are no longer an emerging growth company and will incur additional expense and time related to these efforts at that time. We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year in which we have total annual gross revenues of \$1.07 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of our IPO; (iii) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a “large accelerated filer” under SEC rules.

Our testing, or the subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal control over financial reporting that are deemed to be material weaknesses. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives, diverting their attention away from the day-to-day management of our business, and we may not successfully or efficiently manage our transition into a public company. We may also need to upgrade our financial and operating

systems, implement additional financial and management controls, reporting systems and procedures, and add additional accounting, auditing and financial staff with appropriate public company experience and technical accounting knowledge. We have or will soon have operations in China, Mexico, Turkey and India and may have difficulty hiring and retaining employees in these countries who have the experience necessary to implement the kind of management and financial controls that are expected of a U.S. public company. In this regard, for example, China has only recently begun to adopt management and financial reporting concepts and practices like those in the United States. If we are not able to comply with these requirements in a timely manner or if we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline, and we could be subject to sanctions or investigations by NASDAQ, the SEC or other regulatory authorities, which would require additional financial and management resources.

We are faced with increasingly complex tax issues in many jurisdictions, and we could be obligated to pay additional taxes in various jurisdictions.

We may be subject to taxation in many jurisdictions in the United States and around the world with increasingly complex tax laws, the application of which can be uncertain. The amount of taxes we pay in these jurisdictions could increase substantially as a result of changes in the applicable tax laws, including increased tax rates or revised interpretations of existing tax laws and precedents, which could harm our liquidity and operating results. In addition, the taxing authorities in these jurisdictions could review our tax returns, or authorities in jurisdictions in which we do not file tax returns could assert that we are subject to tax in those jurisdictions, and in either case could impose additional tax, interest and penalties. Further, the authorities could claim that various withholding requirements apply to us or our subsidiaries or assert that benefits of tax treaties are not available to us or our subsidiaries, any of which could have a material adverse impact on us and the results of our operations.

Risks Related to Ownership of Our Common Stock

The price of our common stock may fluctuate substantially and your investment may decline in value.

The market price of our common stock is likely to be highly volatile and may fluctuate substantially due to many factors, including:

- actual or anticipated fluctuations in our results of operations;
- our ability to provide products due to shipments subject to delayed delivery and deferred revenue arrangements;
- loss of or changes in our relationship with one or more of our customers;
- failure to meet our earnings estimates;
- conditions and trends in the energy and manufacturing markets in which we operate and changes in estimates of the size and growth rate of these markets;
- announcements by us or our competitors of significant contracts, developments, acquisitions, strategic partnerships or divestitures;
- availability of equipment, labor and other items required for the manufacture of wind blades;
- changes in governmental policies;
- additions or departures of members of our senior management or other key personnel;
- changes in market valuation or earnings of our competitors;
- sales of our common stock, including sales of our common stock by our directors and officers or by our other principal stockholders;
- the trading volume of our common stock; and
- general market and economic conditions.

In addition, the stock market in general, including NASDAQ, as well as the market for broader energy and renewable energy companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of particular companies affected. These broad market and industry factors may materially harm the market price of our common stock, regardless of our operating performance. In the past, securities class-action litigation has often been instituted against a company following periods of volatility in the market price of that company's securities. Securities class-action litigation, if instituted against us, could result in substantial costs or damages and a diversion of management's attention and resources, which could materially harm our business and operating results.

A significant portion of our total outstanding shares may be sold into the public market in future sales, which could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market can occur at any time. These sales, or the market perception that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. As of December 31, 2018, we had 34,678,084 shares of common stock outstanding. All shares can now be sold, subject to any applicable volume limitations under federal securities laws.

In addition, as of December 31, 2018, there were: (i) 2,600,694 shares subject to outstanding options, or 7.5% of our outstanding shares; (ii) 425,876 restricted stock units, or 1.2% of our outstanding shares; (iii) 249,249 performance stock units, or 0.7% of our outstanding shares; and (iv) 5,980,605 shares reserved for future issuance, or 17.2% of our outstanding shares under the Amended and Restated 2015 Stock Option and Incentive Plan (the 2015 Plan) that will become eligible for sale in the public market to the extent permitted by any applicable vesting requirements and Rules 144 and 701 under the Securities Act. We also filed a shelf registration statement in September 2017 for the resale of up to 19,774,751 shares of common stock by certain of our common stockholders. We also have registered all shares of common stock that we may issue under our employee equity incentive plans. These shares can be freely sold in the public market upon issuance and subject to the restrictions imposed on our affiliates under Rule 144.

In the future, we may also issue our securities in connection with investments or acquisitions. The amount of shares of our common stock issued in connection with an investment or acquisition could constitute a material portion of our then-outstanding shares of our common stock. Any issuance of additional securities in connection with investments or acquisitions may result in additional dilution to you and may cause the market price of our common stock to drop significantly.

The exercise of options and warrants and other issuances of shares of common stock or securities convertible into common stock under our equity compensation plans will dilute your interest.

Under our existing equity compensation plans, as of December 31, 2018, we had outstanding options to purchase 2,600,694 shares of our common stock, 425,876 restricted stock units and 249,249 performance stock units to our employees and non-employee directors. From time to time, we expect to grant additional options and other stock awards in accordance with the 2015 Plan. The exercise of options and warrants at prices below the market price of our common stock could adversely affect the price of shares of our common stock. Additionally, any issuance of our common stock that is not made solely to then-existing stockholders proportionate to their interests, such as in the case of a stock dividend or stock split, will result in dilution to each stockholder by reducing their percentage ownership of the total outstanding shares. If we issue options or warrants to purchase our common stock in the future and those options or warrants are exercised or we issue stock, stockholders may experience further dilution.

Our executive officers, directors and their affiliated entities may be able to exercise substantial control over us and could limit the ability of other stockholders to influence the outcome of key transactions, including changes of control.

Our executive officers, directors and their affiliated entities, in the aggregate, beneficially own approximately 24% of the outstanding common stock, based on 34,914,385 shares of common stock outstanding as of January 31, 2019. Our executive officers, directors and their affiliated entities, if acting together, may be able to control or significantly influence all matters requiring approval by our stockholders, including the election of directors and the

approval of mergers or other significant corporate transactions. The concentration of common stock ownership could have the effect of delaying, preventing, or deterring a change of control of our company, could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company, and could negatively affect the market price of the common stock.

If equity research analysts issue unfavorable commentary or downgrade our common stock, the price of our common stock could decline.

The trading market for our common stock relies in part on the research and reports that equity research analysts publish about us and our business. We do not control the work performed by these analysts. The demand for our common stock could decline if one or more equity analysts downgrade our stock or if those analysts issue unfavorable or inaccurate commentary. If such analysts cease publishing reports about us or our business, we could lose visibility in the market, which in turn could cause our share price and trading volume to decline.

We do not currently intend to pay dividends on the common stock, which may hinder your ability to achieve a return on your investment.

We have never declared or paid any cash dividends on our common stock. The continued operation and expansion of our business will require substantial funding and thus we currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. Accordingly, you are not likely to receive any dividends on common stock in the foreseeable future, and your ability to achieve a return on your investment will therefore depend on appreciation in the price of the common stock.

Provisions of Delaware law or our charter documents could delay or prevent an acquisition of our company, even if the acquisition would be beneficial to our stockholders, and could make it more difficult for you to change management.

Provisions of Delaware law and our amended and restated certificate of incorporation and amended and restated by-laws may discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions may also prevent or delay attempts by stockholders to replace or remove our current management or members of our board of directors. These provisions include:

- a classified board of directors;
- limitations on the removal of directors;
- advance notice requirements for stockholder proposals and nominations;
- the inability of stockholders to act by written consent or to call special meetings;
- the ability of our board of directors to make, alter or repeal our amended and restated by-laws; and
- the authority of our board of directors to issue preferred stock with such terms as our board of directors may determine.

The affirmative vote of the holders of at least 75% of our shares of capital stock entitled to vote, and not less than 75% of the outstanding shares of each class entitled to vote thereon as a class, is necessary to amend or repeal the above provisions that are contained in our amended and restated certificate of incorporation. In addition, absent approval of our board of directors, our amended and restated by-laws may only be amended or repealed by the affirmative vote of the holders of at least 75% of our shares of capital stock entitled to vote.

In addition, we are subject to the provisions of Section 203 of the Delaware General Corporation Law, which limits business combination transactions with stockholders of 15% or more of our outstanding voting stock that our board of directors has not approved. These provisions and other similar provisions make it more difficult for stockholders or potential acquirers to acquire us without negotiation. These provisions may apply even if some stockholders may consider the transaction beneficial to them.

As a result, these provisions could limit the price that investors are willing to pay in the future for shares of our common stock. These provisions might also discourage a potential acquisition proposal or tender offer, even if the acquisition proposal or tender offer is at a premium over the then current market price for our common stock.

We are an “emerging growth company” and will be able to avail ourselves of reduced disclosure requirements applicable to emerging growth companies, which could make our common stock less attractive to investors.

We are an “emerging growth company,” as defined in the JOBS Act, and we intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We cannot predict whether investors will find our common stock less attractive because we may rely on these exemptions. If they do, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year in which we have total annual gross revenues of \$1.07 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of our IPO; (iii) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a “large accelerated filer” under the rules of the SEC.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we are subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties

Our headquarters is located in Scottsdale, Arizona, and we own or lease various other facilities in the United States, China, Mexico, Turkey, India and Denmark. We believe that our properties are generally in good condition, are well maintained and are generally suitable and adequate to carry out our business at expected capacity for the foreseeable future. The table below lists the locations and square footage for our facilities as of February 28, 2019:

Location	Year Commenced	Leased or Owned	Approximate Square Footage	Description of Use
Newton, IA, United States	2008	Leased	337,922	Wind Blade Manufacturing Facility
Newton, IA, United States	2018	Leased	106,121	Transportation Manufacturing Facility
Dafeng, China	2013	Leased	392,000	Wind Blade Manufacturing Facility
Dafeng, China	2015	Leased	446,034	Wind Blade Manufacturing Facility
Taicang Port, China	2007	Owned	226,542	Wind Blade Manufacturing Facility
Yangzhou, China	2018	Leased	934,133	Wind Blade Manufacturing Facility
Juárez, Mexico	2013	Leased	345,984	Wind Blade Manufacturing Facility
Juárez, Mexico	2016	Leased	358,796	Wind Blade Manufacturing Facility
Juárez, Mexico	2017	Leased	339,386	Wind Blade Manufacturing Facility
Juárez, Mexico	2018	Leased	150,000	Precision Molding Manufacturing Facility
Matamoros, Mexico	2017	Leased	527,442	Wind Blade Manufacturing Facility
Izmir, Turkey	2012	Leased	343,000	Wind Blade Manufacturing Facility
Izmir, Turkey	2015	Leased	397,931	Wind Blade Manufacturing Facility
Fall River, MA, United States	2008	Leased	70,000	Composite Solution Manufacturing and Research and Development Facility
Warren, RI, United States	2004	Leased	91,387	Precision Molding Development and Manufacturing and Research and Development Facility
Santa Teresa, NM, United States	2014	Leased	503,710	Wind Blade Storage Facility
Scottsdale, AZ, United States	2015	Leased	22,508	Corporate Headquarters
Kolding, Denmark	2018	Leased	2,583	Advanced Engineering Center
Taicang City, China	2013	Leased	69,750	Precision Molding Manufacturing Facility
Chennai, India	2019	Leased	776,280	Wind Blade Manufacturing Facility

Item 3. 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 August 2015, we entered into a transition agreement with our former Senior Vice President – Asia, pursuant to which that individual transitioned out of this role at the end of 2015 and was to serve in a consulting capacity in 2016 and 2017. In January 2016, following our discovery that the individual had materially violated the terms of the transition agreement, we terminated the consultancy for cause. In April 2016, an arbitration claim was filed in China by the individual with the Taicang Labor and Personnel Dispute Arbitration Committee alleging that we improperly terminated the transition agreement. The individual is demanding that we honor the terms of the transition agreement and pay compensation and fees under the transition agreement, which in the aggregate totals approximately \$2.6 million. In addition, the individual is also challenging the validity of our termination of an option to purchase 164,880 shares of our common stock and 77,760 restricted stock units awarded under the 2015 Plan, which were canceled in January 2016 when the consultancy was terminated. The Taicang Labor and Personnel Dispute Arbitration Committee awarded damages to the individual of approximately \$1.2 million but rejected the claims regarding the termination of the stock option and restricted stock unit awards. We subsequently appealed the arbitration award in favor of the individual to the Taicang Municipal People’s Court, which affirmed the arbitration award in June 2018. We appealed this judgment to an appellate level court in the Jiangsu Province and the appellate court affirmed the judgment of the Taicang Municipal People’s court and we paid the judgement award in the fourth quarter of 2018. We currently are evaluating whether to further appeal this matter.

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. A hearing date has been set for June 2019 and the matter remains pending.

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 4. Mine Safety Disclosures

Not applicable.

PART II

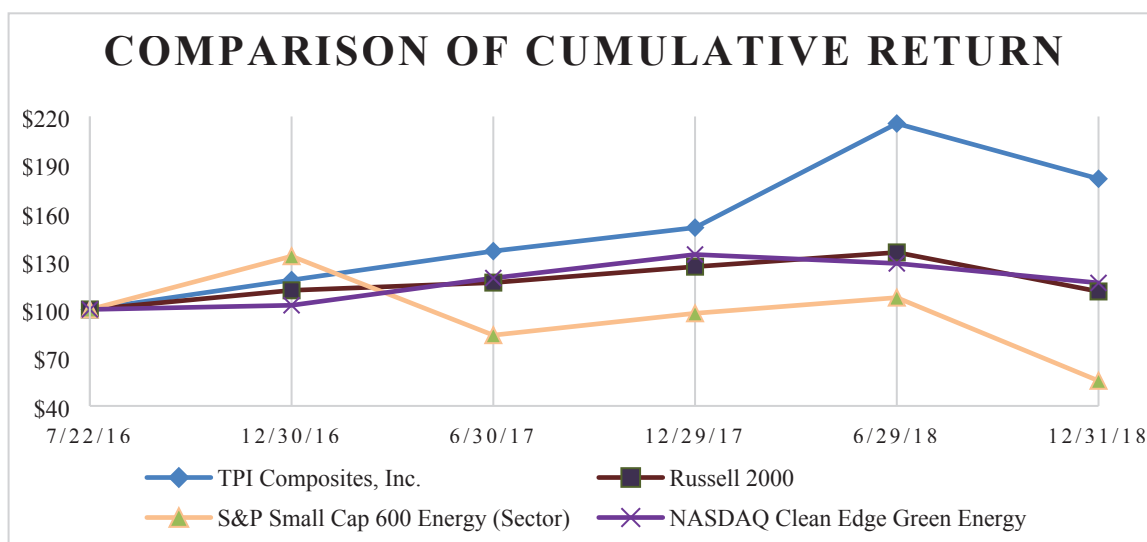
Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

On July 22, 2016, our common stock began trading on the NASDAQ Global Market under the symbol “TPIC.” Prior to that time, there was no public market for our stock.

Stock Performance Graph

The following graph and table illustrate the total stockholder return from July 22, 2016 through December 31, 2018, on our common stock, the Russell 2000 Index, the S&P Small Cap 600 Energy (Sector) Index and the NASDAQ Clean Edge Green Energy Index, assuming an investment of \$100.00 on July 22, 2016 including the reinvestment of dividends.



	Base Period					
	7/22/16	12/30/16	6/30/17	12/29/17	6/29/18	12/31/18
TPI Composites, Inc.	\$ 100.00	\$ 118.29	\$ 136.28	\$ 150.88	\$ 215.63	\$ 181.27
Russell 2000	\$ 100.00	\$ 111.89	\$ 116.69	\$ 126.60	\$ 135.47	\$ 111.19
S&P Small Cap 600 Energy (Sector)	\$ 100.00	\$ 133.11	\$ 84.00	\$ 97.60	\$ 107.35	\$ 55.64
NASDAQ Clean Edge Green Energy	\$ 100.00	\$ 102.59	\$ 119.52	\$ 134.16	\$ 128.63	\$ 116.50

Holder

As of January 31, 2019, there were five stockholders of record of our common stock, although there is a much larger number of beneficial owners.

Dividends

We have never declared or paid any cash dividends on shares of our capital stock. We currently intend to retain earnings, if any, to finance the development and growth of our business and do not anticipate paying cash dividends on the common stock in the future. Any payment of any future dividends will be at the discretion of the board of directors, subject to compliance with certain covenants in our loan agreements, after taking into account various factors, including our financial condition, operating results, capital requirements, restrictions contained in

any future financing instruments, growth plans and other factors the board deems relevant. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources” included in Part II, Item 7.

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) 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, we 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. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations— Liquidity and Capital Resources” included in Part II, Item 7.

Securities Authorized for Issuance under Equity Compensation Plans

The information required in response to Item 201(d) of Regulation S-K is set forth in Part III, Item 12 of this Annual Report on Form 10-K which is incorporated herein by reference.

Recent Sales of Unregistered Securities

None

Use of Proceeds from Registered Securities

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 invested the remaining funds received in registered money market funds.

Issuer Purchases of Equity Securities

None

Item 6. Selected Financial Data

The following selected consolidated financial data should be read in conjunction with the information contained in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in Part II, Item 7 of this Annual Report on Form 10-K and the consolidated financial statements and related notes included in Part II, Item 8 of this Annual Report on Form 10-K, in order to understand the factors that may affect the comparability of the financial data presented below.

	Year Ended December 31,				
	2018	2017 ⁽¹⁾	2016 ⁽¹⁾	2015	2014
Consolidated Income Statement Data:	(in thousands, except per share data)				
Net sales	\$ 1,029,624	\$ 955,198	\$ 769,019	\$ 585,852	\$ 320,747
Cost of sales	882,075	804,099	664,026	528,247	289,528
Startup and transition costs	74,708	40,628	18,127	15,860	16,567
Total cost of goods sold	956,783	844,727	682,153	544,107	306,095
Gross profit	72,841	110,471	86,866	41,745	14,652
General and administrative expenses	48,123	40,373	33,892	14,126	9,175
Income from operations	24,718	70,098	52,974	27,619	5,477
Other income (expense):					
Interest income	181	95	344	161	186
Interest expense	(10,417)	(12,381)	(17,614)	(14,565)	(7,236)
Loss on extinguishment of debt	(3,397)	—	(4,487)	—	(2,946)
Realized loss on foreign currency remeasurement	(13,489)	(4,471)	(757)	(1,802)	(1,743)
Miscellaneous income	4,650	1,191	238	246	539
Total other expense	(22,472)	(15,566)	(22,276)	(15,960)	(11,200)
Income (loss) before income taxes	2,246	54,532	30,698	11,659	(5,723)
Income tax benefit (provision)	3,033	(15,798)	(3,654)	(3,977)	(925)
Net income (loss)	5,279	38,734	27,044	7,682	(6,648)
Net income attributable to preferred stockholders ⁽²⁾	—	—	5,471	9,423	13,930
Net income (loss) attributable to common stockholders	<u>\$ 5,279</u>	<u>\$ 38,734</u>	<u>\$ 21,573</u>	<u>\$ (1,741)</u>	<u>\$ (20,578)</u>
Weighted-average common shares outstanding:					
Basic ⁽³⁾	34,311	33,844	17,530	4,238	4,238
Diluted ⁽³⁾	36,002	34,862	17,616	4,238	4,238
Net income (loss) per common share:					
Basic	\$ 0.15	\$ 1.14	\$ 1.23	\$ (0.41)	\$ (4.86)
Diluted	\$ 0.15	\$ 1.11	\$ 1.22	\$ (0.41)	\$ (4.86)

	Year Ended December 31,				
	2018	2017 ⁽¹⁾	2016 ⁽¹⁾	2015	2014
Other Financial Information:	(in thousands, except other operating information)				
Total billings ⁽⁴⁾	\$ 1,006,541	\$ 941,565	\$ 764,424	\$ 600,107	\$ 362,749
EBITDA ⁽⁴⁾	\$ 42,308	\$ 88,516	\$ 65,641	\$ 37,479	\$ 8,768
Adjusted EBITDA ⁽⁴⁾	\$ 68,173	\$ 100,111	\$ 76,300	\$ 39,281	\$ 13,457
Capital expenditures	\$ 52,688	\$ 44,828	\$ 30,507	\$ 26,361	\$ 18,924
Free cash flow ⁽⁴⁾	\$ (55,946)	\$ 29,772	\$ 29,335	\$ 4,932	\$ (52,141)
Total debt, net of debt issuance costs and discount	\$ 137,623	\$ 121,385	\$ 123,155	\$ 129,346	\$ 120,849
Net cash (debt) ⁽⁴⁾	\$ (53,155)	\$ 24,557	\$ (6,379)	\$ (90,667)	\$ (87,547)
Other Operating Information:					
Sets ⁽⁵⁾	2,423	2,736	2,154	1,609	966
Estimated megawatts ⁽⁶⁾	6,560	6,602	4,920	3,595	2,029
Dedicated manufacturing lines ⁽⁷⁾	55	48	44	34	29
Total manufacturing lines installed ⁽⁸⁾	43	41	33	30	22
Manufacturing lines in startup ⁽⁹⁾	16	9	3	10	9
Manufacturing lines in transition ⁽¹⁰⁾	15	—	3	11	8

- (1) Reflects the impact of the adoption of Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers*, (Topic 606) effective January 1, 2018. See Note 1 - Recently Issued Accounting Pronouncements - Revenue from Contracts with Customers of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for a further discussion. Prior period information for 2015 and 2014 has not been restated and is, therefore, not comparable to the 2018, 2017 and 2016 information.
- (2) Represents the accrual of dividends on our convertible and senior redeemable preferred shares, the accretion to redemption amounts on our convertible preferred shares and warrant fair value adjustments. Immediately prior to the closing of the IPO, all preferred shares were converted into shares of our common stock and as a result, the accrual of dividends ceased.
- (3) For the years ended December 31, 2017 and 2016, the weighted-average diluted shares outstanding include the conversion on a net issuance basis of our common warrants and the stock options issued under the 2015 Plan and the 2008 Stock Option and Grant Plan. For the years ended December 31, 2015 and 2014, the weighted-average common shares outstanding are the same under the basic and diluted per share calculations as we incurred a net loss in those years.
- (4) See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics Used By Management to Measure Performance” included in Part II, Item 7 of this Annual Report on Form 10-K for more information and the reconciliations of total billings, EBITDA, adjusted EBITDA, free cash flow and net cash (debt) to net sales, net income (loss), net income (loss), net cash provided by operating activities and total debt, net of debt issuance costs and discount, respectively, the most directly comparable financial measures calculated and presented in accordance with GAAP.
- (5) Number of wind blade sets (which consist of three wind blades) invoiced worldwide in the period. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics Used By Management to Measure Performance” included in Part II, Item 7 of this Annual Report on Form 10-K for more information.

- (6) Estimated megawatts of energy capacity to be generated by wind blade sets invoiced in the period. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics Used By Management to Measure Performance” included in Part II, Item 7 of this Annual Report on Form 10-K for more information.
- (7) Number of manufacturing lines that are dedicated to our customers under long-term supply agreements at the end of the period. For the year ended December 31, 2017, includes seven manufacturing lines for GE Wind that were not extended beyond 2017. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics Used By Management to Measure Performance” included in Part II, Item 7 of this Annual Report on Form 10-K for more information. Dedicated manufacturing lines may be greater than total manufacturing line capacity in instances where we have signed new supply agreements for manufacturing facilities that are under construction or have not yet been built.
- (8) Number of manufacturing lines installed and either in operation, startup or transition at the end of the period. For the year ended December 31, 2017, includes four manufacturing lines for GE Wind that were not extended beyond 2017. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics Used By Management to Measure Performance” included in Part II, Item 7 of this Annual Report on Form 10-K for more information.
- (9) Number of manufacturing lines in a startup phase during the pre-production and production ramp-up period. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics Used By Management to Measure Performance” included in Part II, Item 7 of this Annual Report on Form 10-K for more information.
- (10) Number of manufacturing lines that were being transitioned to a new wind blade model during the period. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics Used By Management to Measure Performance” included in Part II, Item 7 of this Annual Report on Form 10-K for more information.

	December 31,				
	2018	2017 ⁽¹⁾	2016 ⁽¹⁾	2015	2014
Consolidated Balance Sheet Data:	(in thousands)				
Cash and cash equivalents	\$ 85,346	\$ 148,113	\$ 119,066	\$ 45,917	\$ 43,592
Total assets	604,855	545,737	436,833	329,920	273,704
Total debt, net of debt issuance costs and discount	137,623	121,385	123,155	129,346	120,849
Total liabilities	383,898	325,183	265,433	322,287	271,448
Total convertible and senior redeemable preferred shares and warrants	—	—	—	198,830	189,349
Total stockholders’ equity (deficit)	220,957	220,554	171,400	(191,197)	(187,093)

Item 7. 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 consolidated financial statements and the related notes included in Part II, Item 8 of this Annual Report on Form 10-K and other financial information appearing elsewhere in this Annual Report on Form 10-K. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report on Form 10-K, 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 Annual Report on Form 10-K, particularly those under “Risk Factors” included in Part I, Item 1A of this Annual Report on Form 10-K. Dollars in tabular format are presented in thousands, except as otherwise indicated.

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. 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.

We also leverage our advanced composite technology and history of innovation to supply high strength, lightweight and durable composite products to the transportation market. In November 2017, we signed a five-year supply agreement with Proterra Inc. (Proterra) to supply Proterra Catalyst® composite bus bodies from our existing Rhode Island facility and also from a new manufacturing facility in Newton, Iowa which commenced operations in the second quarter of 2018. In February 2018, we entered into an agreement with Navistar, Inc. (Navistar) to design and develop a Class 8 truck comprised of a composite tractor, trailer and frame rails. This collaborative development project was entered into in connection with Navistar’s recent award under the Department of Energy’s (DOE) Super Truck II investment program, which is designed to promote fuel efficiency in commercial vehicles. In November 2018, we announced a capital investment of approximately \$11.5 million in 2019 to develop a highly automated pilot manufacturing line for the electric vehicle market. We plan to locate this pilot line adjacent to our second Newton, Iowa location where we manufacture composite bus bodies for Proterra. We expect this investment will enable us to further develop our technology, create defensible product and process IP and demonstrate our capability to manufacture composite components cost effectively at automotive volume rates. We also expect this pilot line will also help our current and potential customers to de-risk the decision-making process to commit to TPI for high-volume manufacturing programs in the future.

Our wind blade and precision molding and assembly systems manufacturing businesses accounted for approximately 95%, 96% and 97% of our total net sales for each of the years ended December 31, 2018, 2017 and 2016, respectively. As of February 28, 2019, our long-term wind and transportation supply agreements provide for minimum aggregate volume commitments from our customers of approximately \$4.0 billion and encourage our customers to purchase additional volume up to, in the aggregate, a total contract value of approximately \$6.8 billion through the end of 2023. In recent years, we have experienced significant growth in our OEM customer base, as according to data from WoodMac, our OEM customers collectively accounted for approximately 54% of the global onshore wind energy market and approximately 90% of that market excluding China over the three years ended December 31, 2017, based on MWs of energy capacity installed. Additionally, our customers represented 99.8% of the U.S. onshore wind turbine market over the three years ended December 31, 2017, based on MWs of energy capacity installed. We believe these figures demonstrate the leading position of our existing OEM customers, as well

as our opportunity to develop relationships with new OEM customers as additional OEMs seeking to capitalize on the benefits of outsourced wind blade manufacturing while maintaining high quality customization and dedicated capacity. We believe that these trends will help us to strengthen our current customer base, grow our business worldwide, increase our revenue and improve our business prospects.

We divide our business operations into four geographic operating segments—the United States (U.S.), Asia, Mexico and Europe, the Middle East, Africa and India (EMEI), 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 for the manufacture of 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 which commenced operations in the second quarter of 2018, (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 we expect to commence operations in the first quarter of 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 the third quarter of 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 expect to commence operations at this facility in the first quarter of 2019. This segment also performs wind blade inspection and repair services.
- Our EMEI 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 the construction of 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 Affecting our Business

We have identified the following material trends affecting our business:

- The wind power generation industry has grown rapidly and expanded worldwide over the last five years to meet global demand for electricity and the expanded use of renewable energy. Our sales of wind blades to our wind turbine customers have grown rapidly over the last several years in response to these trends. We expect our revenue growth rate in 2019 to accelerate considerably due to the full year of operations in our plant in Matamoros, Mexico, the planned opening of our Yangzhou, China manufacturing facility in the first quarter of 2019 and the completion of multiple blade model transitions and startups in 2018. We expect to continue to have a high level of manufacturing lines in transition and startup in 2019. We have entered into long-term supply agreements with customers in the United States, China, Mexico, Turkey and India that expire between 2020 and 2023.
- Many governments are shifting from feed-in tariffs to auction-based tenders as a means of promoting the development and growth of renewable energy sources such as wind energy. As a result of this shift, our wind turbine OEM customers have experienced intense pricing pressure with respect to the sale of their turbines together with increased competitive pricing from solar energy. To date, these pricing pressures have not materially affected our results of operations, however, if these pricing pressures continue, we may be required to reduce our margins or choose to pass on the savings obtained from manufacturing cost reductions and productivity improvements to our OEM customers to remain competitive.

- During the last several years, wind turbine OEMs generally have increasingly outsourced the production of wind blades and other key components to specialized manufacturers to meet this increasing global demand for wind energy in a cost-effective manner in new and growing markets. That shift, together with the overall expansion of the wind power generation industry, has increased our addressable market. Given our growth in production, we have hired several thousand new employees globally in the past two years. In addition, we have expanded our wind turbine OEM customer base from one to six OEM customers since 2013, capitalizing on the growth and expansion of the wind energy generation industry generally as well as the specific trend of most wind turbine OEMs increasing the outsourcing of the manufacturing of wind blades for growth and diversification.
- Despite the trend of wind turbine OEMs increasingly outsourcing their wind blade manufacturing production requirements, we expect GE Wind, our second largest customer, to insource a greater percentage of its wind blade production requirements as a result of its 2017 acquisition of LM, our largest competitor. Although GE Wind did not extend our Turkey and Taicang Port, China supply agreements which expired at the end of 2017, since then we have extended our existing supply agreement in one of our Mexico plants by two years to 2022 and have increased the number of lines under contract with GE Wind by two in that facility. In addition, GE Wind has agreed to transition to a larger blade model in our Newton, Iowa plant in early 2019 and to eliminate its option to terminate their supply agreement at this location prior to its December 2020 expiration.
- Changing customer demands, including shifts to bigger wind turbines with larger wind blades, have driven some of our customers to require us to transition to new wind blade models one or two times during the term of a long-term supply agreement. Although we generally receive transition payments to compensate us for certain costs incurred during these transitions, these payments may not always fully cover the transition costs and lost margin. As a result, these transitions have and may continue to have a short-term, negative impact on our consolidated operating results and cash flows. However, our precision molding and assembly manufacturing business generally increases as we transition to larger wind blade models and larger wind blades generally have a higher average selling price, so that the transition to larger wind blades may increase our net sales over time. As we transition to new wind blade models, we also often extend our existing supply agreements.
- The financial performance of certain of our smaller wind turbine OEM customers has deteriorated over the last twelve months. As a result, we expect that in certain instances overall demand for our wind turbine blades from these customers may decline in 2019 compared to our prior forecasts. However, we expect this decline in demand to be offset by an increase in demand from certain of our other larger OEM customers.
- We expect that a substantial portion of our future revenue growth will be derived from our international operations. We have expanded our manufacturing facilities internationally over the last several years, including opening facilities in Mexico, Turkey and China, to meet the needs of our customers. In February 2019, we entered into a new lease agreement with a third party for the construction of 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 portion of our net sales that were derived from our international operations increased to 84% for the year ended December 31, 2018, from 80% for the year ended December 31, 2017 and 75% for the year ended December 31, 2016. We believe we will continue to derive a substantial portion of our future net sales growth from our international operations.
- Our long-term supply agreements with our customers generally encourage our customers to maximize the volume of wind blades they purchase from us, since purchasing less than a specified amount triggers higher pricing, as well as provide downside protection for us through minimum annual volume commitments. Some of our long-term supply agreements also provide for annual sales price reductions reflecting assumptions regarding increases in our manufacturing efficiency and productivity. We work to continue to drive down the cost of materials and production through innovation and global sourcing, a portion of the benefit of which we share with our customers contractually, further strengthening our deep customer relationships. Wind blade pricing is based on annual commitments of volume as established in the customer's contract, with orders less than committed volume resulting in additional costs per wind blade to customers. Orders in excess of annual commitments may but generally do not result in discounts to customers from the contracted price for the committed volume. Customers may utilize early payment discounts, which are reported as a reduction of revenue at the time the discount is taken.

- The long-term supply agreements we sign with our customers provide us with significant visibility of future production demands due in part to the annual minimum purchase commitments of our customers contained in those agreements. These annual minimum purchase commitments generally require our customers to purchase a negotiated percentage of the manufacturing capacity that we have agreed to dedicate to them. Generally, this percentage begins at 100% of the manufacturing capacity that we have dedicated to a particular customer for the first few years of the supply agreement, and the percentage declines over time in subsequent years according to the terms of the agreement, but generally remains above 50%. It is our experience that our customers will generally order wind blades from us in a volume that exceeds (sometimes substantially) the annual minimum purchase commitments contained in our supply agreements, particularly in the later years of a supply agreement when the annual minimum purchase commitment percentage declines. As of February 28, 2019, our long-term wind and transportation supply agreements provide for minimum aggregate volume commitments from our customers of approximately \$4.0 billion and encourage our customers to purchase additional volume up to, in the aggregate, a total contract value of approximately \$6.8 billion through the end of 2023. As noted elsewhere in this Annual Report on Form 10-K, some of our long-term supply agreements are subject to early termination by our customers if our customers pay an early termination fee. Additionally, some of our contracts allow our customers to reduce the number of lines under contract without penalty, prior to the end of the contract term. We caution investors that the annual minimum purchase commitments in our long-term supply agreements can understate the forecasted net sales that we are likely to generate in a given period or periods if all of our long-term supply agreements remain in place and pricing remains materially unchanged, and they could potentially overstate the forecasted net sales that we are likely to generate in a given period or periods if one or more of our agreements were to be terminated by our customers for any reason or the number of lines under contract are reduced. See “Business—Wind Blade Long-Term Supply Agreements” included in Part 1, Item 1A of this Annual Report on Form 10-K for additional information.
- We expect our new manufacturing facilities to generally generate operating losses in their first 18 months of operations due to production and overhead expenses as they initially operate far below capacity during the pre-production and production ramp up periods. As a result, this generally has a negative impact on our results of operations during these ramp-up periods. In addition, construction of new facilities and expansion of existing facilities, including the fabrication of precision molding and assembly systems to outfit those facilities, is complex and involves inherent risks. For planning purposes, we generally estimate that the startup of a new six-line manufacturing facility requires cash for net operating expenses and working capital of between \$20 million to \$25 million. We also estimate that capital expenditures, primarily for machinery and equipment, of between \$30 million to \$35 million will be required. We expect to incur significant startup costs and expenses during 2019 in connection with the planned opening of our new manufacturing facility in Chennai, India and at our Yangzhou, China; Matamoros, Mexico and Newton, Iowa facilities.
- As a public company, we incur significant legal, accounting and other expenses. In addition, the Sarbanes-Oxley Act, as well as rules subsequently implemented by the SEC and NASDAQ, impose various requirements on public companies, including requiring establishment and maintenance of effective disclosure controls and internal control over financial reporting and changes in corporate governance practices. We estimate that we will incur approximately \$3.0 million to \$4.0 million in expenses annually in response to these requirements.

COMPONENTS OF RESULTS OF OPERATIONS

Net Sales

We recognize revenue from manufacturing services over time as the customer controls 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 manufacture 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 included in general and administrative expenses. For the years ended December 31, 2018, 2017 and 2016, total research and development expenses totaled \$0.8 million, \$1.6 million and \$1.5 million, respectively.

For the year ended December 31, 2018, the realized loss 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 loss on the sale of other assets at our manufacturing facilities totaled \$4.6 million. There were no such amounts for the years ended December 31, 2017 and 2016.

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.

During the year ended December 31, 2018, we expensed \$2.0 million of deferred financing costs and \$1.4 million of prepayment penalties related to the refinancing of our previous credit facility within the caption “Loss on extinguishment of debt” in the accompanying consolidated income statements. During the year ended December 31, 2016, we expensed \$2.4 million of deferred financing costs and \$2.1 million of prepayment penalties related to the refinancing of our previous credit facility with the caption “Loss on extinguishment of debt” in the accompanying consolidated income statements.

Income Tax Benefit (Provision)

Income tax benefit (provision) consists of federal, state, provincial, local and foreign taxes based on income in jurisdictions in which we operate, including in the U.S., China, Mexico and Turkey. 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

Net Income Attributable to Preferred Stockholders

Net income attributable to preferred stockholders relates to the accrual of dividends on our convertible and senior redeemable preferred shares, the accretion to redemption amounts on our convertible preferred shares and warrant fair value adjustment. Immediately prior to the closing of our IPO, all preferred shares were converted into shares of our common stock and as a result, the accrual of dividends ceased.

KEY METRICS USED BY MANAGEMENT TO MEASURE PERFORMANCE

In addition to measures of financial performance presented in our 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.

Key Financial Measures

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Net sales	\$ 1,029,624	\$ 955,198	\$ 769,019
Total billings ⁽¹⁾	\$ 1,006,541	\$ 941,565	\$ 764,424
Net income	\$ 5,279	\$ 38,734	\$ 27,044
EBITDA ⁽¹⁾	\$ 42,308	\$ 88,516	\$ 65,641
Adjusted EBITDA ⁽¹⁾	\$ 68,173	\$ 100,111	\$ 76,300
Capital expenditures	\$ 52,688	\$ 44,828	\$ 30,507
Free cash flow ⁽¹⁾	\$ (55,946)	\$ 29,772	\$ 29,335
Total debt, net of debt issuance costs and discount	\$ 137,623	\$ 121,385	\$ 123,155
Net cash (debt) ⁽¹⁾	\$ (53,155)	\$ 24,557	\$ (6,379)

Key Operating Metrics

	Year Ended December 31,		
	2018	2017	2016
Sets ⁽²⁾	2,423	2,736	2,154
Estimated megawatts ⁽³⁾	6,560	6,602	4,920
Dedicated manufacturing lines ⁽⁴⁾	55	48	44
Total manufacturing lines installed ⁽⁵⁾	43	41	33
Manufacturing lines in startup ⁽⁶⁾	16	9	3
Manufacturing lines in transition ⁽⁷⁾	15	—	3

- (1) See below for more information and a reconciliation of total billings, EBITDA, adjusted EBITDA, free cash flow and net cash (debt) to net sales, net income (loss), net income (loss), net cash provided by operating activities and total debt, net of debt issuance costs and discount, respectively, the most directly comparable financial measures calculated and presented in accordance with GAAP.
- (2) Number of wind blade sets (which consist of three wind blades) invoiced worldwide in the period.
- (3) Estimated megawatts of energy capacity to be generated by wind blade sets invoiced in the period.
- (4) Number of wind blade manufacturing lines that are dedicated to our customers under long-term supply agreements at the end of the period. Dedicated manufacturing lines may be greater than total manufacturing line capacity in instances where we have signed new supply agreements for manufacturing facilities that are under construction or have not yet been built.
- (5) Number of wind blade manufacturing lines installed and either in operation, startup or transition at the end of the period.
- (6) Number of wind blade manufacturing lines in a startup phase during the pre-production and production ramp-up period.
- (7) Number of wind blade manufacturing lines that were being transitioned to a new wind blade model during the period.

Net sales and 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. However, in many cases, our customers request that we store their wind blades until they are ready to assemble wind turbines at a particular wind farm project. We have no control over when our customers decide to ship wind blades from our storage sites, and in some cases, our customers have stored large numbers of their wind blades on our sites for six months or more. However, we are contractually entitled to payment for those wind blades and, accordingly, invoice them when the blades are placed in storage.

Our use of total billings has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our results as reported under GAAP. Some of these limitations are:

- Total billings includes wind blades that have not been delivered and for which we are responsible if damage occurs to them while we hold them; and
- Other companies, including companies in our industry, may define total billings differently, which reduces its usefulness as a comparative measure.

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, the Credit Facility contains minimum EBITDA (as defined in the Credit Facility) 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 adjusted EBITDA has limitations as an analytical tool and you should not consider it in isolation or as a substitute for analysis of our results as reported under GAAP. Some of these limitations are:

- adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;
- adjusted EBITDA does not reflect our cash expenditures for capital equipment or other contractual commitments;
- adjusted EBITDA does not reflect the interest expense or the cash requirements necessary to service interest or principal payments on our indebtedness;
- adjusted EBITDA does not reflect losses on extinguishment of debt relating to prepayment penalties, termination fees and the write off of any remaining debt discount and debt issuance costs upon the repayment or refinancing of our debt;
- adjusted EBITDA does not reflect tax payments that may represent a reduction in cash available to us;
- although depreciation and amortization are non-cash charges, the assets being depreciated and amortized may have to be replaced in the future, and adjusted EBITDA does not reflect capital expenditure requirements relating to the future need to augment or replace those assets;
- adjusted EBITDA does not reflect the realized gains or losses from foreign currency remeasurement in our international operations;
- adjusted EBITDA does not reflect share-based compensation expense on equity-based incentive awards to our officers, employees, directors and consultants;
- adjusted EBITDA does not reflect the realized gains or losses on the sale of assets; and
- other companies, including companies in our industry, may calculate EBITDA and adjusted EBITDA differently, which reduces their usefulness as comparative measures.

In evaluating EBITDA and adjusted EBITDA, you should be aware that in the future, we will incur expenses similar to the adjustments noted in this presentation. 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 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 table reconciles our non-GAAP key financial measures to the most directly comparable GAAP measures:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Net sales	\$ 1,029,624	\$ 955,198	\$ 769,019
Change in gross contract assets	(15,011)	(13,437)	(10,094)
Foreign exchange impact ⁽¹⁾	(8,072)	(196)	5,499
Total billings	<u>\$ 1,006,541</u>	<u>\$ 941,565</u>	<u>\$ 764,424</u>
Net income	\$ 5,279	\$ 38,734	\$ 27,044
Adjustments:			
Depreciation and amortization	26,429	21,698	13,186
Interest expense (net of interest income)	10,236	12,286	17,270
Loss on extinguishment of debt	3,397	—	4,487
Income tax provision (benefit)	(3,033)	15,798	3,654
EBITDA	42,308	88,516	65,641
Share-based compensation expense	7,795	7,124	9,902
Realized loss on foreign currency remeasurement	13,489	4,471	757
Realized loss on sale of assets	4,581	—	—
Adjusted EBITDA	<u>\$ 68,173</u>	<u>\$ 100,111</u>	<u>\$ 76,300</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:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Net cash provided by (used in) operating activities	\$ (3,258)	\$ 74,600	\$ 59,842
Less capital expenditures	(52,688)	(44,828)	(30,507)
Free cash flow	<u>\$ (55,946)</u>	<u>\$ 29,772</u>	<u>\$ 29,335</u>

Net cash (debt) is reconciled as follows:

	December 31,		
	2018	2017	2016
	(in thousands)		
Cash and cash equivalents	\$ 85,346	\$ 148,113	\$ 119,066
Less total debt, net of debt issuance costs	(137,623)	(121,385)	(123,155)
Less debt issuance costs	(878)	(2,171)	(2,290)
Net cash (debt)	<u>\$ (53,155)</u>	<u>\$ 24,557</u>	<u>\$ (6,379)</u>

Key Operating Metrics

Key operating metrics consist of sets invoiced, estimated megawatts of energy capacity for wind blade sets invoiced, dedicated manufacturing lines, total manufacturing lines installed, 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.

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 from 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.

Total 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 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

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

The following table summarizes certain information relating to our operating results (in thousands) and related percentage of net sales for the years ended December 31 that have been derived from our consolidated financial statements:

	2018		2017	
Net sales	\$ 1,029,624	100.0%	\$ 955,198	100.0%
Cost of sales	882,075	85.7%	804,099	84.2%
Startup and transition costs	74,708	7.2%	40,628	4.2%
Total cost of goods sold	956,783	92.9%	844,727	88.4%
Gross profit	72,841	7.1%	110,471	11.6%
General and administrative expenses	48,123	4.7%	40,373	4.2%
Income from operations	24,718	2.4%	70,098	7.4%
Other expense	(22,472)	(2.2)%	(15,566)	(1.6)%
Income before income taxes	2,246	0.2%	54,532	5.8%
Income tax benefit (provision)	3,033	0.3%	(15,798)	(1.7)%
Net income	\$ 5,279	0.5%	\$ 38,734	4.1%

Net sales for the year ended December 31, 2018 increased by \$74.4 million or 7.8% to \$1,029.6 million compared to \$955.2 million in the same period in 2017. Net sales of wind blades increased by 4.8% to \$933.3 million for the year ended December 31, 2018 as compared to \$890.5 million in the same period in 2017. The increase was primarily driven by higher average sales prices due to the mix of wind blade models produced during the year ended December 31, 2018 compared to the same period in 2017. This increase was partially offset by a 12% decrease in the number of wind blades produced year over year due to the number of transitions and startups during the 2018 period as well as the loss of volume from two contracts that expired at the end of 2017. Net sales from the manufacturing of precision molding and assembly systems during the year ended December 31, 2018 increased to \$48.9 million from \$27.6 million in the same period in 2017. This increase was primarily the result of our customers requiring more precision molding and assembly systems from our tooling facilities during the year ended December 31, 2018 as compared to the same period in 2017 as a result of the blade transitions and startups during 2018. Additionally, there was a \$10.4 million increase in transportation and other sales during the year ended December 31, 2018 as compared to the same period in 2017. Total billings for the year ended December 31, 2018 increased by \$65.0 million or 6.9% to \$1,006.5 million compared to \$941.6 million in the same period in 2017. The impact of the fluctuating U.S. dollar against the Euro at our Turkey operations and the Chinese Renminbi at our China operations on consolidated net sales and total billings for the year ended December 31, 2018 as compared to 2017 was not significant.

Total cost of goods sold for the year ended December 31, 2018 was \$956.8 million and included \$61.9 million related to startup costs in our new plants in Turkey, Mexico, Iowa and China, the startup costs related to a new customer in Taicang, China and \$12.8 million of transition costs due to the number of transitions during the period. This compares to total cost of goods sold for the year ended December 31, 2017 of \$844.7 million and included \$40.6 million related to startup costs in our new plants in Turkey and Mexico and the startup of new wind blade models for certain of our customers in Turkey and Dafeng, China. Cost of goods sold as a percentage of net sales increased by approximately five percentage points during the year ended December 31, 2018 as compared to the same period in 2017, driven by the \$34.1 million increase in startup and transition costs, 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 2.2% for the year ended December 31, 2018 as compared to 2017.

General and administrative expenses for the year ended December 31, 2018 totaled \$48.1 million, or \$43.5 million excluding the realized loss 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 loss on the sale of other assets at our manufacturing facilities totaling \$4.6 million, as compared to \$40.4 million of general and administrative expenses for the same period in 2017. As a percentage of net sales, general and administrative expenses, excluding the realized loss on the sale of certain receivables and other assets, was 4.2% for the year ended December 31, 2018, comparable to the same period in 2017. The increase in expenses was primarily driven by additional costs incurred related to the implementation of ASU 2014-09, *Revenue from Contracts with Customers* (Topic 606), costs related to the Sarbanes-Oxley Act and our advanced engineering center, increased personnel costs from filling our key global positions to support our growth and diversification strategy as well as additional depreciation expense related to our enhanced corporate infrastructure.

Other expense totaled \$22.5 million for the year ended December 31, 2018 as compared to \$15.6 million for the same period in 2017. The increase was primarily due to a \$9.0 million increase in the realized losses on foreign currency remeasurement primarily related to the change in the Turkish Lira during 2018 and the expensing of \$3.4 million of deferred financing costs and prepayment penalties related to the refinancing of our previous credit facility in 2018, partially offset by a \$3.5 million increase in miscellaneous income for the year ended December 31, 2018 as compared to the same period in 2017.

Income taxes reflected a benefit of \$3.0 million for the year ended December 31, 2018 as compared to a provision of \$15.8 million for the same period in 2017. The decrease was primarily due to the reduction in pretax income and the reversal of our valuation allowances related to our U.S. federal deferred tax assets in the 2018 period.

Net income for the year ended December 31, 2018 was \$5.3 million as compared to \$38.7 million in the same period in 2017. The decrease was primarily due to the reasons set forth above. Diluted earnings per share for the year ended December 31, 2018 was \$0.15 compared to \$1.11 for the year ended December 31, 2017.

Segment Discussion

The following table summarizes our net sales and income (loss) from operations by our four geographic operating segments for the years ended December 31:

	<u>2018</u>	<u>2017</u>
<u>Net Sales</u>	<u>(in thousands)</u>	
U.S.	\$ 163,716	\$ 191,025
Asia	306,255	372,520
Mexico	268,756	206,563
EMEAI	290,897	185,090
Total net sales	<u>\$ 1,029,624</u>	<u>\$ 955,198</u>
	<u>2018</u>	<u>2017</u>
<u>Income (Loss) from Operations</u>	<u>(in thousands)</u>	
U.S.	\$ (67,357)	\$ (33,231)
Asia	28,147	76,332
Mexico	12,154	14,430
EMEAI	51,774	12,567
Total income from operations	<u>\$ 24,718</u>	<u>\$ 70,098</u>

U.S. Segment

Net sales in the year ended December 31, 2018 decreased by \$27.3 million or 14.3% to \$163.7 million compared to \$191.0 million in the same period in 2017. Net sales of wind blades decreased to \$126.3 million during the year ended December 31, 2018 from \$164.9 million in the same period of 2017. The decrease was primarily due to an 8% reduction in the number of wind blades produced in the year ended December 31, 2018 as compared to the same period in 2017 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 year ended December 31, 2018 were \$5.0 million compared to \$8.4 million during the same period in 2017. Additionally, there was a \$14.6 million increase in transportation and other sales during the year ended December 31, 2018 as compared to 2017.

The loss from operations for the year ended December 31, 2018 was \$67.4 million as compared to a loss of \$33.2 million in the same period in 2017. These amounts include corporate general and administrative costs of \$43.5 million and \$40.4 million for the years ended December 31, 2018 and 2017, respectively. The increase in the corporate general and administrative costs was primarily driven by additional costs incurred related to the implementation of Topic 606, costs related to the Sarbanes-Oxley Act and our advanced engineering center, increased personnel costs from filling our key global positions to support our growth and diversification strategy as well as additional depreciation expense related to our enhanced corporate infrastructure. The operating results were also unfavorably impacted by the startup costs related to our second Iowa facility and the lower wind blade volume discussed above.

Asia Segment

Net sales in the year ended December 31, 2018 decreased by \$66.3 million or 17.8% to \$306.3 million compared to \$372.5 million in the same period in 2017. Net sales of wind blades were \$264.4 million in the year ended December 31, 2018 as compared to \$346.2 million in the same period of 2017. The decrease was primarily due to a 36% decrease in the number of wind blades produced during the year ended December 31, 2018 compared to the same period in 2017 primarily due to the expiration of a contract at the end of 2017 and the delayed startup of a new customer in 2018. This decrease was partially offset by a higher average sales prices due to the mix of wind blade models produced during the year ended December 31, 2018 compared to the same period in 2017. Net sales from the manufacturing of precision molding and assembly systems totaled \$36.6 million during the 2018 period compared to \$18.4 million during the same period in 2017. The impact of the fluctuating U.S. dollar against the Chinese Renminbi had a favorable impact of 0.6% on net sales during the year ended December 31, 2018 as compared to the same period in 2017.

Income from operations in the Asia segment for the year ended December 31, 2018 was \$28.1 million as compared to \$76.3 million in the same period in 2017. This decrease was driven by the startup costs incurred at our Taicang Port plant for a new customer and lower wind blade volume discussed above. The fluctuating U.S. dollar against the Chinese Renminbi had a favorable impact of 1.1% on cost of goods sold for the year ended December 31, 2018 as compared to the comparable 2017 period.

Mexico Segment

Net sales in the year ended December 31, 2018 increased by \$62.2 million or 30.1% to \$268.8 million compared to \$206.6 million in the same period in 2017. The increase reflects an 18% net increase in overall wind blade volume driven by greater volume at our second and third Mexico plants, partially offset by a decrease in wind blade volume at our first Mexico plant. These increases were also impacted by an increase in the average sales prices of wind blades due to a change in the mix of wind blades between the two comparable periods.

Income from operations in the Mexico segment for the year ended December 31, 2018 was \$12.2 million as compared to \$14.4 million in the same period in 2017. The decrease was driven by higher startup costs related to our new facility in Matamoros, Mexico, partially offset by the overall increase in wind blade volume noted above as well as from savings in raw material costs and production efficiencies.

EMEI Segment

Net sales during the year ended December 31, 2018 increased by \$105.8 million or 57.2% to \$290.9 million compared to \$185.1 million in the same period in 2017. The increase was driven by a 77% increase in wind blade production in our second Turkey plant, partially offset by a 11% decrease in wind blade volume at our first Turkey plant as a result of the December 31, 2017 conclusion of our supply agreement with GE. Other items having a favorable impact on net sales include overall higher average sales prices of wind blades delivered in the comparative periods due to the beginning of wind blade production in our second Turkey plant and the mix of wind blades sold during the period. The fluctuation of the U.S. dollar relative to the Euro had a 1.0% unfavorable impact on net sales in the year ended December 31, 2018 as compared to 2017.

The income from operations in the EMEAI segment for the year ended December 31, 2018 was \$51.8 million as compared to \$12.6 million in the same period in 2017. The increase was primarily driven by the wind blade production in our second Turkey plant, improved operating efficiency at our first Turkey plant and savings in raw materials. The fluctuation of the U.S. dollar relative to the Turkish Lira and Euro had a 7.5% favorable impact on cost of goods sold in the year ended December 31, 2018 as compared to 2017.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

The following table summarizes certain information relating to our operating results (in thousands) and related percentage of net sales for the years ended December 31 that has been derived from our consolidated financial statements:

	2017		2016	
Net sales	\$ 955,198	100.0%	\$ 769,019	100.0%
Cost of sales	804,099	84.2%	664,026	86.3%
Startup and transition costs	40,628	4.2%	18,127	2.4%
Total cost of goods sold	844,727	88.4%	682,153	88.7%
Gross profit	110,471	11.6%	86,866	11.3%
General and administrative expenses	40,373	4.2%	33,892	4.4%
Income from operations	70,098	7.4%	52,974	6.9%
Other expense	(15,566)	-1.6%	(22,276)	-2.9%
Income before income taxes	54,532	5.8%	30,698	4.0%
Income tax provision	(15,798)	-1.7%	(3,654)	-0.5%
Net income	38,734	4.1%	27,044	3.5%
Net income attributable to preferred stockholders	—	0.0%	5,471	0.7%
Net income attributable to common stockholders	\$ 38,734	4.1%	\$ 21,573	2.8%

Net sales for the year ended December 31, 2017 increased by \$186.2 million or 24.2% to \$955.2 million compared to \$769.0 million in the same period in 2016. Net sales of wind blades increased by 25.0% to \$890.5 million for the year ended December 31, 2017 as compared to \$712.4 million in the same period in 2016. The increase was primarily driven by a 30% increase in the number of wind blades produced during 2017 as compared to 2016. This increase was partially offset by lower average sales price due to geographic mix, blade mix and the result of savings in raw material costs, a portion of which we share with our customers. Net sales from the manufacturing of precision molding and assembly systems during the year ended December 31, 2017 decreased to \$27.6 million from \$35.9 million in the same period in 2016. This decrease was primarily the result of reduced demand from our customers for precision molding and assembly systems from our Rhode Island facility. Additionally, there was a \$16.3 million increase in transportation and other sales during the year ended December 31, 2017 as compared to the same period in 2016. Total billings for the year ended December 31, 2017 increased by \$177.1 million or 23.2% to \$941.6 million compared to \$764.4 million in the same period in 2016. The impact of the fluctuating U.S. dollar against the Euro at our Turkey operations and the Chinese Renminbi at our China operations on consolidated net sales and total billings for the year ended December 31, 2017 as compared to 2016 was not significant.

Total cost of goods sold for the year ended December 31, 2017 was \$844.7 million and included \$40.6 million related to startup costs in our new plants in Turkey and Mexico and the startup of new wind blade models for certain of our customers in Turkey and Dafeng, China. This compares to total cost of goods sold for the year ended December 31, 2016 of \$682.2 million which included aggregate costs of \$18.1 million related to startup costs in our new plants in Mexico and Turkey as well as the transition of wind blade models in our original plant in Mexico. Cost of goods sold as a percentage of net sales remained consistent during the year ended December 31, 2017 as compared to the same period in 2016 driven by improved operating efficiency in China and the impact of savings in raw material costs and foreign currency fluctuations, offset by higher operating costs in our Turkey and Mexico plants due to the startup costs incurred with the opening of new plants in both those segments. 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 1.7% for the year ended December 31, 2017 as compared to 2016.

General and administrative expenses for the year ended December 31, 2017 totaled \$40.4 million as compared to \$33.9 million for the same period in 2016. As a percentage of net sales, general and administrative expenses were 4.2% for the year ended December 31, 2017, down from 4.4% in the same period in 2016. The increase in expenses was primarily driven by additional costs incurred related to the implementation of Topic 606, costs related to the Sarbanes-Oxley Act and our secondary public offering, increased personnel costs from filling our key global positions to support our growth and diversification strategy, partially offset by a \$2.3 million decrease in share-based compensation costs in the 2017 period as compared to the same period in 2016, which was the period in which we recorded the expense from the original grant date of the awards.

Other expense totaled \$15.6 million for the year ended December 31, 2017 as compared to \$22.3 million for the same period in 2016. The decrease was primarily due a \$9.7 million decrease in interest expense, related to the expensing of \$4.5 million of deferred financing costs and prepayment penalties related to the refinancing of our previous credit facility in 2016 and the decrease in 2017 non-cash interest expense due to the write off in 2016 of the beneficial conversion feature and deferred financing costs under our previous credit facility. In addition, there was a \$1.0 million increase in miscellaneous income, partially offset by a \$3.7 million increase in realized losses on foreign currency remeasurement for the year ended December 31, 2017 as compared to the same period in 2016.

Income taxes reflected a provision of \$15.8 million for the year ended December 31, 2017 as compared to a provision of \$3.7 million for the same period in 2016. The higher effective tax rate in 2017 was primarily due to the improved operating results in China and Turkey and the mix of earnings among jurisdictions year over year.

Net income for the year ended December 31, 2017 was \$38.7 million, as compared to \$27.0 million in the same period in 2016. The increase was primarily due to the reasons set forth above.

Net income attributable to preferred stockholders was \$5.5 million during the year ended December 31, 2016 and there was none in the 2017 period as following our IPO in July 2016, all of the previously outstanding preferred shares were converted into common shares.

Net income attributable to common stockholders increased to \$38.7 million during the year ended December 31, 2017 from \$21.6 million in the same period in 2016. This increase was primarily due to the improved operating results discussed above as well as the decrease in the net income attributable to preferred stockholders. Diluted earnings per share for the year ended December 31, 2017 was \$1.11 compared to \$1.22 for the year ended December 31, 2016.

Segment Discussion

The following table summarizes our net sales and income (loss) from operations by our four geographic operating segments for the years ended December 31:

	2017	2016
	(in thousands)	
Net Sales		
U.S.	\$ 191,025	\$ 191,863
Asia	372,520	309,561
Mexico	206,563	128,020
EMEAI	185,090	139,575
Total net sales	<u>\$ 955,198</u>	<u>\$ 769,019</u>
	2017	2016
	(in thousands)	
Income (Loss) from Operations		
U.S.	\$ (33,231)	\$ (19,154)
Asia	76,332	67,127
Mexico	14,430	10,060
EMEAI	12,567	(5,059)
Total income from operations	<u>\$ 70,098</u>	<u>\$ 52,974</u>

U.S. Segment

Net sales in the year ended December 31, 2017 decreased by \$0.8 million or 0.4% to \$191.0 million compared to \$191.9 million in the same period in 2016. Net sales of wind blades increased to \$164.9 million during the year ended December 31, 2017 from \$163.9 million in the same period of 2016. The increase was primarily due to a 7% increase in the number of wind blades produced in the year ended December 31, 2017 as compared to the same period in 2016, mostly offset by 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 customers. Net sales from the manufacturing of precision molding and assembly systems during the year ended December 31, 2017 were \$8.4 million compared to \$17.7 million during the same period in 2016. The decrease was the result of our customers requiring less precision molding and assembly systems from our Rhode Island facility during the year ended December 31, 2017 as compared to the same period in 2016. Additionally, there was a \$7.5 million increase in non-wind related net sales, primarily transportation sales, during the year ended December 31, 2017 as compared to 2016.

The loss from operations for the year ended December 31, 2017 was \$33.2 million as compared to \$19.2 million in the same period in 2016. These amounts include corporate general and administrative costs of \$40.4 million and \$33.9 million for the years ended December 31, 2017 and 2016, respectively. The increase in the corporate general and administrative costs was primarily driven by additional costs incurred related to the implementation of Topic 606, costs related to the Sarbanes-Oxley Act and our secondary public offering, increased personnel costs from filling our key global positions to support our growth and diversification strategy, partially offset by a \$2.3 million decrease in share-based compensation costs during the year ended December 31, 2017 as compared to the same period in 2016. The operating results were also unfavorably impacted by slightly lower gross profit on wind blades delivered during the year ended December 31, 2017 as compared to the 2016 period as well as the lower precision molding and assembly system volume discussed above during the year ended December 31, 2017 as compared to the same period in 2016.

Asia Segment

Net sales in the year ended December 31, 2017 increased by \$63.0 million or 20.3% to \$372.5 million compared to \$309.6 million in the same period in 2016. Net sales of wind blades were \$346.2 million in the year ended December 31, 2017 as compared to \$287.4 million in the same period in 2016. The increase was primarily the result of a 30% increase in the number of wind blades produced during the year ended December 31, 2017 compared to the same period in 2016. These increases were partially offset by a change in the mix of wind blade models sold,

lower average sales prices of the same wind blades sold in both periods due to savings in raw material costs, a portion of which we share with our customers. Net sales from the manufacturing of precision molding and assembly systems during the year ended December 31, 2017 were \$18.4 million compared to \$17.8 million during the same period in 2016. The impact of the fluctuating U.S. dollar against the Chinese Renminbi had an unfavorable impact of 0.8% on net sales during the year ended December 31, 2017 as compared to the same period in 2016.

Income from operations in the Asia segment for the year ended December 31, 2017 was \$76.3 million as compared to \$67.1 million in the same period in 2016. In addition to the factors noted above, the increase in income from operations reflects higher gross margins on wind blade sales driven by operating efficiencies as well as lower overhead costs in the 2017 period as compared to 2016. The fluctuating U.S. dollar against the Chinese Renminbi had a favorable impact of 1.5% on cost of goods sold for the year ended December 31, 2017 as compared to the comparable 2016 period.

Mexico Segment

Net sales in the year ended December 31, 2017 increased by \$78.5 million or 61.4% to \$206.6 million compared to \$128.0 million in the same period in 2016. The increase reflects an increase in wind blade volume at our first Mexico plant and the beginning of wind blade production in our second and third plants, partially offset by lower average sales prices of wind blades delivered in both periods.

Income from operations in the Mexico segment for the year ended December 31, 2017 was \$14.4 million as compared to \$10.1 million in the same period in 2016. The increase was largely driven by the increase in wind blade volume in the 2017 period as compared to 2016 and operating efficiencies at our first Mexico plant, as well as from savings in raw material costs, partially offset by the startup losses incurred at two of our new Mexico facilities. The fluctuating U.S. dollar against the Mexican Peso on cost of goods sold for the year ended December 31, 2017 as compared to the comparable 2016 period was not significant.

EMEA Segment

Net sales during the year ended December 31, 2017 increased by \$45.5 million or 32.6% to \$185.1 million compared to \$139.6 million in the same period in 2016. The increase was driven by the beginning of wind blade production in our second Turkey plant, partially offset by a 24% decrease in wind blade volume at our first Turkey plant as a result of GE Wind only purchasing the minimum volume required under its supply agreement after its decision to not renew its supply agreement with us beyond 2017. As a result, we accelerated production for GE in 2017 and completed 100% of GE volume by the end of June 2017 to enable us to accelerate the transition of those manufacturing lines to two new manufacturing lines for another customer in the second half of 2017. Other items having a favorable impact on net sales include the mix of wind blades sold during the period as well as overall higher average sales prices of wind blades delivered due to the beginning of wind blade production in our second Turkey plant in the period as compared to 2016. The fluctuating U.S. dollar against the Euro had a favorable effect on net sales of 1.8% for the year ended December 31, 2017 as compared to the comparable 2016 period.

The income from operations in the EMEA segment for the year ended December 31, 2017 was \$12.6 million as compared to a loss of \$5.1 million in the same period in 2016. The increase was primarily driven by the wind blade production in our second Turkey plant, improved operating efficiencies at our first Turkey plant, savings in raw material costs and a warranty reserve provided in 2016 related to one of its customers to resolve a potential warranty claim arising from wind blades primarily manufactured in 2014. The fluctuation of the U.S. dollar relative to the Turkish Lira and Euro had a 5.4% favorable impact on cost of goods sold in the year ended December 31, 2017 as compared to 2016.

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. As discussed below, during 2017 we completed a secondary public offering of common stock for which we received no proceeds and during 2016 we completed an initial public offering of common stock for which we received net proceeds of \$67.2 million. During the years ended December 31, 2018, 2017 and 2016, we had net repayments of financing arrangements of \$8.9 million, \$8.1 million and \$15.4 million, respectively. As of December 31, 2018 and 2017, we had \$138.5 million and \$123.6 million in outstanding indebtedness, excluding debt issuance costs, respectively. As of December 31, 2018, we had an aggregate of \$79.8 million of remaining capacity and \$77.2 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.

In July 2016, we completed an IPO of 7,187,500 shares of our common stock at a public offering price of \$11.00 per share, which included 937,500 shares issued pursuant to the underwriters' over-allotment option. We received \$67.2 million in proceeds, net of underwriting discounts and offering expenses and intend to use the net proceeds from the public offering for our working capital and other general corporate purposes, including financing existing manufacturing operations, expansion in existing and new geographies and repayment of a customer advance. Immediately prior to the closing of the IPO, all shares of the then-outstanding redeemable preferred shares converted into an aggregate of 21,110,204 shares of common stock and the redeemable preferred share warrants were converted on a net issuance basis into 120,923 shares of common stock. In addition, concurrent with the closing of the IPO, certain subordinated convertible promissory notes in the aggregate principal and interest amount of \$11.9 million were converted into an aggregate of 1,079,749 shares of common stock at the public offering price of \$11.00 per share. Prior to the IPO, in July 2016 we also consummated a 360-for-1 forward stock split of our common stock.

In May 2017, we completed a secondary public offering of 5,075,000 shares of our common stock at a price of \$16.35 per share, which included 575,000 shares issued pursuant to the underwriters' option to purchase additional shares. All of the shares were sold by existing stockholders and certain of our executive officers. The selling stockholders received all of the net proceeds of \$78.8 million from the secondary public offering. We did not sell any shares and did not receive any of the proceeds from the offering and the costs paid by us in connection with the offering of \$0.8 million were recorded in general and administrative costs in the accompanying consolidated income statement.

We anticipate that any new facilities and future facility expansions will be funded through cash flows from operations, the proceeds of our IPO, the incurrence of other indebtedness and other potential sources of liquidity.

At December 31, 2018 and 2017, we had unrestricted cash, cash equivalents and short-term investments totaling \$85.3 million and \$148.1 million, respectively. The December 31, 2018 balance includes \$31.6 million of cash located outside of the United States, including \$28.9 million in China, \$1.0 million in Turkey and \$1.7 million in Mexico. The December 31, 2017 balance includes \$49.2 million of cash located outside of the United States, including \$46.3 million in China, \$0.7 million in Turkey and \$2.2 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) 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

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Net income	\$ 5,279	\$ 38,734	\$ 27,044
Depreciation and amortization	26,429	21,698	13,186
Share-based compensation expense	7,795	7,124	9,902
Other non-cash items	(6,598)	2,557	3,047
Changes in assets and liabilities	(36,163)	4,487	6,663
Net cash provided by (used in) operating activities	\$ (3,258)	\$ 74,600	\$ 59,842

Net cash used in operating activities totaled \$3.3 million for the year ended December 31, 2018 and was primarily the result of a \$36.2 million decrease in working capital and \$6.6 million of other non-cash items, mostly offset by non-cash depreciation and amortization charges totaling \$26.4 million, share-based compensation costs of \$7.8 million and net income of \$5.3 million. The key components of the decrease in working capital include a \$59.2 million increase in accounts receivable, a \$7.9 million increase in contract assets and liabilities, a \$5.2 million increase in other noncurrent assets, and a \$2.0 million decrease in other noncurrent liabilities. This was partially offset by a \$32.3 million increase in accounts payable and accrued expenses and a \$6.3 million increase in accrued warranty. The working capital 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 year ended December 31, 2018.

Net cash provided by operating activities totaled \$74.6 million for the year ended December 31, 2017 and was primarily the result of net income of \$38.7 million, non-cash depreciation and amortization charges totaling \$21.7 million, share-based compensation costs of \$7.1 million as well as the net changes in working capital. The key components of the working capital changes include a \$51.5 million increase in accounts payable and accrued expenses, a \$9.3 million increase in accrued warranty, a \$3.2 million decrease in prepaid expenses and other current assets, and a \$2.8 million decrease in other noncurrent assets. This was partially offset by a \$54.2 million increase in accounts receivable, a \$4.6 million decrease in other noncurrent liabilities, and a \$4.4 million increase in contract assets and liabilities. The working capital 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 year ended December 31, 2017.

Net cash provided by operating activities totaled \$59.8 million for the year ended December 31, 2016 and was primarily the result of net income of \$27.0 million, non-cash depreciation and amortization charges totaling \$13.2 million, share-based compensation costs of \$9.9 million and other non-cash items of \$3.0 million, as well as the net changes in working capital. The key components of the working capital change include a \$17.4 million increase in accounts payable and accrued expenses, a \$6.7 million increase in accrued warranty, and a \$5.6 million decrease in accounts receivable. This was partially offset by a \$17.2 million increase in contract assets and liabilities and a \$3.7 million increase in other noncurrent assets. The working capital 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 year ended December 31, 2016.

Investing Cash Flows

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Purchase of property and equipment	\$ (52,688)	\$ (44,828)	\$ (30,507)
Proceeds from sale of assets	—	850	—
Net cash used in investing activities	\$ (52,688)	\$ (43,978)	\$ (30,507)

Net cash flows used in investing activities totaled \$52.7 million, \$44.0 million and \$30.5 million in the years ended December 31, 2018, 2017 and 2016, respectively, driven primarily by capital expenditures for new facilities and expansion or improvements at existing facilities. The capital expenditures for the year ended December 31, 2018 primarily related to our new wind blade plants in Matamoros, Mexico and Yangzhou, China, the expansion and improvements at our Taicang, China facility, our second wind blade plant in Turkey, our second facility in Newton, Iowa and costs to enhance our information technology systems. The capital expenditures for the year ended December 31, 2017 primarily related to the construction and outfitting of our second and third wind blade plants in Mexico and our second wind blade plant in Turkey, the expansion and improvements at certain of our existing wind blade plants and costs at our corporate office to enhance our information technology systems. The capital expenditures for the year ended December 31, 2016 primarily related to the plant build outs of three new wind blade facilities, two in Mexico and one in Turkey. The above capital expenditure amounts do not include the amounts which we financed primarily through capital leases totaling \$22.0 million, \$6.2 million and \$10.0 million in the years ended December 31, 2018, 2017 and 2016, respectively.

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 December 31, 2018 to complete our current projects in process will be approximately \$9.7 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

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Proceeds from issuance of common stock sold in initial public offering, net of underwriters discount and offering costs	\$ —	\$ —	\$ 67,199
Net proceeds from (repayments of) revolving and term loans	14,463	(3,750)	(930)
Net proceeds from (repayments of) accounts receivable financing	424	(1,020)	(5,385)
Net proceeds from (repayments of) working capital loans	—	(4,638)	(4,290)
Net proceeds from (repayments of) other debt	(23,763)	1,313	(4,765)
Debt issuance costs	(281)	(454)	—
Proceeds from exercise of stock options	4,284	1,430	—
Repurchase of common stock including shares withheld in lieu of income taxes	(2,859)	(1,264)	—
Net cash provided by (used in) financing activities	<u>\$ (7,732)</u>	<u>\$ (8,383)</u>	<u>\$ 51,829</u>

Net cash flows used in financing activities for the year ended December 31, 2018 and 2017 totaled \$7.7 million and \$8.4 million, respectively. The net cash flows provided by financing activities totaled \$51.8 million for the year ended December 31, 2016. Net cash used in financing activities for the year ended December 31, 2018 primarily reflects the net repayment of growth-related debt and the repurchase of common stock associated with taxes on the vesting of share-based awards, mostly offset by the net proceeds from revolving and term loans and the proceeds from the exercise of stock options. Net cash flows used in financing activities for the year ended December 31, 2017 primarily reflects the net repayment of working capital loans, term loans and accounts receivable financings. Net cash flows provided by financing activities for the year ended December 31, 2016 primarily reflects the net proceeds received from our initial public offering, partially offset by repayments of accounts receivable financings and working capital loans.

Description of Our Indebtedness

Refer to Note 12 - Long-Term Debt, Net of Debt Issuance Costs and Current Maturities of the Notes to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K for a description of our indebtedness.

Other Contingencies

Other than as noted in “Legal Proceedings” included in Part I, Item 3 of this Annual Report on Form 10-K as of December 31, 2018 and 2017, we were not involved in any material litigation. In the future, however, we may become involved in various claims and legal actions arising in the ordinary course of business which may have a material adverse effect on our consolidated financial position, results of operations or liquidity.

The wind blades and other composite structures that we produce are subject to warranties against defects in workmanship and materials, generally for a period of two to five years. We are not responsible for the fitness for use of the wind blade or the overall wind turbine system. If a wind blade is found to be defective during the warranty period as a result of a defect in workmanship or materials, among other potential remedies, we may need to repair or replace the wind blade (which could include significant transportation and installation costs) at our sole expense. At December 31, 2018 and 2017, we had accrued warranty reserves totaling \$36.8 million and \$30.4 million, respectively. The increase in the accrued warranty reserve during 2018 was primarily due to the accrual for sales during the year, partially offset by reductions in the reserve due to the cost of warranty services provided during the year and the expiration of the warranty period for specific products.

Other than as noted in “Legal Proceedings” included in Part I, Item 3 of this Annual Report on Form 10-K as of December 31, 2018 and 2017, we had no material operating expenditures for environmental matters, including government imposed remedial or corrective actions, during the years ended December 31, 2018, 2017 and 2016.

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 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 0.55%.

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 \$17.2 million as of December 31, 2018) 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 year ended December 31, 2018, \$214.6 million of receivables were sold under the accounts receivable assignment agreements described above.

Contractual Obligations

The following table summarizes certain of our contractual obligations as of December 31, 2018:

	Payments Due by Period				Total
	Less than 1 year	1-3 years	3-5 years (in thousands)	More than 5 years	
Long-term debt obligations ⁽¹⁾	\$ 27,058	\$ 16,793	\$ 94,650	\$ —	\$ 138,501
Operating lease obligations ⁽²⁾	28,173	49,813	43,648	61,049	182,683
Purchase obligations	1,875	884	—	—	2,759
Estimated interest payments ⁽³⁾	5,951	9,011	4,992	—	19,954
Total contractual obligations	\$ 63,057	\$ 76,501	\$ 143,290	\$ 61,049	\$ 343,897

- (1) See “—Description of Our Indebtedness” above.
- (2) Our operating lease obligations represent the contractual payments due for the lease of our corporate office in Scottsdale, Arizona in addition to our facilities in Iowa, Massachusetts, Rhode Island, New Mexico, China, Mexico, Turkey and Denmark.
- (3) Includes interest on variable rate debt based on interest rates as of December 31, 2018.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amount of our assets, liabilities, revenue and expenses and related disclosure of contingent assets and liabilities. We evaluate our estimates on an ongoing basis, including those related to income taxes and warranty expense. We base our estimates on our historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making the judgments we make about the carrying values of our assets and liabilities that are not readily apparent from other sources. Because these estimates can vary depending on the situation, actual results may differ from the estimates.

We believe the following critical accounting policies affect our more significant judgments used in the preparation of our consolidated financial statements.

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 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 (e.g. transitions). 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 consolidated balance sheets and are reduced as we record revenue over time.

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.

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 cost 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.

Income Taxes. In connection with preparing our consolidated financial statements, we are required to estimate our income taxes in each of the jurisdictions in which we operate. This process involves our assessment of any net operating loss carryforwards, as well as estimating our actual current tax liability together with assessing temporary differences resulting from differing treatment of items, such as reserves and accrued liabilities, for tax and accounting purposes. We also have to assess whether any portion of our earnings generated in one taxing jurisdiction might be claimed as earned by income tax authorities in a differing tax jurisdiction. Significant judgment is required in determining our annual tax rate, the allocation of earnings to various jurisdictions and in the evaluation of our tax positions.

Additionally, we record the estimated future tax effects of temporary differences between the tax basis of assets and liabilities and amounts reported in the accompanying consolidated balance sheets, as well as operating loss and tax credit carryforwards. We then assess the likelihood that our deferred income tax assets will be realized by evaluating all available positive and negative evidence in order to determine if it is more-likely-than-not that the deferred tax assets will be realized. To the extent we believe that the realization of our deferred tax assets is not more-likely-than-not, we are required to establish a valuation allowance. In doing so we considered our recent operating history, taxpaying history and future reversals of deferred tax liabilities based upon future operating projections. Historically, as a result of cumulative losses in the United States, we determined that a valuation allowance for all of our U.S. deferred tax assets was appropriate. During the third quarter of 2018, we reversed a portion of the United States valuation allowance, based on the available evidence at that time. We periodically evaluate all available positive and negative evidence regarding the future recoverability of our deferred tax assets and, when we determine that the recoverability of deferred tax assets meets the criteria of more-likely-than-not, we reduce the valuation allowance against our deferred tax assets. The effect of a change in judgment concerning the realizability of deferred tax assets is included in provision for income taxes.

As of December 31, 2018, we have U.S. federal NOLs of approximately \$25.8 million, state NOLs of approximately \$118.5 million, foreign NOLs of approximately \$14.6 million and foreign tax credits of approximately \$1.9 million available to offset future taxable income in the U.S. and China. We also have tax incentives available to reduce approximately \$0.3 million of future taxes to be incurred by our original Turkey facility.

On December 22, 2017, President Trump signed into law Tax Reform, which significantly revised U.S. tax law by, among other things, lowering the statutory federal corporate income tax rate from 35% to 21% for tax years beginning after December 31, 2017, eliminating certain deductions, imposing a mandatory one-time transition tax, introducing new tax regimes, and changing how foreign earnings are subject to U.S. tax. Tax Reform also includes many new provisions, such as changes to bonus depreciation, changes to deductions for executive compensation, interest expense limitations, net operating loss deduction limitations, tax on GILTI earned by foreign corporate subsidiaries, the BEAT, and a deduction for FDII.

At December 31, 2018, we completed the accounting for the enactment-date income tax effects of Tax Reform, which resulted in an immaterial impact to the financial statements. Upon further analyses of certain aspects of Tax Reform, and refinement of calculations during 2018, we increased our provisional amount of previously untaxed foreign earnings by \$13.8 million, to \$88.1 million. This resulted in no change to our U.S. federal income tax expense due to the impact of foreign tax credits. In addition, the provisional net tax expense, which was estimated at approximately \$0.1 million, primarily attributable to the reduction in the federal tax rate, was unchanged. Additionally, we have made a policy election to account for any impacts of GILTI tax in the period in which it is incurred.

Income tax expense or benefit, deferred tax assets and liabilities, and liabilities for unrecognized tax benefits reflect our best estimate of current and future taxes to be paid. We are subject to income taxes in both the U.S. and numerous foreign jurisdictions in which we operate, principally, China, Mexico, and Turkey. Significant judgements and estimates are required in determining our consolidated income tax expense. The statutory federal corporate income tax rate in the U.S. decreased from 35% to 21% beginning in January 2018, while the tax rates in China and Mexico are 25% and 30%, respectively. During the fourth quarter of 2017, Turkey also modified its statutory corporate income tax rate from 20% to 22% for 2018, 2019, and 2020. Our second Turkey facility is located in a tax-free zone and is not subject to income taxes for its earnings recognized from its manufacturing activities.

Warranty Expense. As discussed above, the wind blades we manufacture are subject to warranties against defects in workmanship and materials, generally for a period of two to five years. We are not responsible for the fitness for use of the wind blade in the overall wind turbine system. If a wind blade is found to be defective during the warranty period as a result of a defect in workmanship or materials, among other potential remedies, we may need to repair or replace the wind blade at our sole expense. We provide warranties for all of our products with terms and conditions that vary depending on the product sold. We record warranty expense based upon our estimate 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.

Our estimate of warranty expense requires us to make assumptions about matters that are highly uncertain, including future rates of product failure, repair costs, availability of materials, shipping and handling, and de-installation and re-installation costs at customers' sites, among others. When a potential or actual warranty claim arises, we may accrue additional warranty reserves for the estimated cost of remediation or proposed settlement. We accrued \$15.0 million during 2016 to cover the aggregate costs associated with the agreement that we entered into with Nordex to settle potential claims relating to a wind blade failure that occurred in 2015 and certain alleged defects with respect to that wind blade and certain other wind blades that were primarily manufactured in 2014. See "—Other Contingencies" above for more information. Except for these costs, we have not experienced other material warranty expenses beyond the provision described above in the years ended December 31, 2018, 2017 and 2016. However, changes in warranty reserves could have a material effect on our consolidated financial statements.

Recent Accounting Pronouncements

For a discussion of recent accounting pronouncements, see Note 1 – Summary of Operations and Significant Accounting Policies of the Notes to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K.

Jumpstart Our Business Startups Act of 2012

On April 5, 2012, the JOBS Act was enacted. Section 107 of the JOBS Act provides that an “emerging growth company” can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. We intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year in which we have total annual gross revenues of \$1.07 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of our IPO; (iii) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the previous three years or (iv) the date on which we are deemed to be a “large accelerated filer” under the rules of the SEC.

We expect to no longer qualify as an emerging growth company at some point during 2019; therefore, we will no longer be able to take advantage of the exemptions provided for the various reporting requirements described above.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Item 7A. 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, Turkey and Denmark. 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 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 \$7.4 million and \$8.9 million for the years ended December 31, 2018 and 2017, 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 \$7.6 million and \$13.3 million for the years ended December 31, 2018 and 2017, 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 December 31, 2018, our EMEAI segment has one general credit agreement with a Turkish financial institution outstanding which is tied to EURIBOR. This agreement contains collateralized financing of capital expenditures. As of December 31, 2018, there was \$12.2 million of collateralized financing of capital expenditures outstanding. In addition, as of December 31, 2018, our Credit Agreement includes interest on the unhedged principal amount of \$15.4 million which is tied to LIBOR. The one EMEAI general credit agreement and our Credit Agreement noted above are the only variable rate debt that we had outstanding as of December 31, 2018 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 December 31, 2018, 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 8. Financial Statements and Supplementary Data

The financial statements required to be filed pursuant to this Item 8 are appended to this Report. An index of those financial statements is found in Item 15.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None

Item 9A. 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 December 31, 2018 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 December 31, 2018.

Management’s Report on Internal Control Over Financial Reporting and Attestation Report of the Registered Public Accounting Firm

As required by Rules 13a-15(f) promulgated under the Exchange Act, our management is responsible for establishing and maintaining adequate internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2018. Management based its assessment on criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Management's assessment included evaluation of elements such as the design and operating effectiveness of key financial reporting controls, process documentation, accounting policies and our overall control environment. Based on this assessment, management has concluded that our internal control over financial reporting was effective as of December 31, 2018 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles. We reviewed the results of management's assessment with the Audit Committee of our Board of Directors.

This Annual Report on Form 10-K does not include an attestation report of our registered public accounting firm on our internal control over financial reporting due to an exemption established under the JOBS Act for “emerging growth companies.”

Changes in Internal Control Over Financial Reporting

As a result of the adoption of Topic 606, we have re-evaluated and established new internal controls related to revenue recognition. We are also currently updating our enterprise risk planning systems to accommodate Topic 606 and will continue to evaluate such internal controls.

Except as noted above, there have not been any other changes in our internal control over financial reporting during the three months ended December 31, 2018, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item is incorporated by reference to “Business – Executive Officers” included in Part 1, Item 1 of this Annual Report on Form 10-K and the information that will be contained in our proxy statement related to the 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2018.

Item 11. Executive Compensation

The information required by this Item is incorporated by reference to the information that will be contained in our proxy statement related to the 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2018.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item is incorporated by reference to the information that will be contained in our proxy statement related to the 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2018.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item is incorporated by reference to the information that will be contained in our proxy statement related to the 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2018.

Item 14. Principal Accounting Fees and Services

The information required by this Item is incorporated by reference to the information that will be contained in our proxy statement related to the 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2018.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) Financial Statements and Schedules

The financial statements listed in the accompanying Index to Consolidated Financial Statements are filed as part of this Annual Report on Form 10-K.

(b) Exhibits

See Exhibit Index.

Item 16. Form 10-K Summary

Not applicable.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
TPI Composites, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of TPI Composites, Inc. and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income (loss), changes in stockholders' equity (deficit), and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

Adoption of New Accounting Pronouncement

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for revenue in 2018, 2017, and 2016 due to the adoption of ASC Topic 606, *Revenue from Contracts with Customers*.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2008.

Phoenix, Arizona
March 4, 2019

TPI COMPOSITES, INC. AND SUBSIDIARIES

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

	December 31,	
	2018	2017 (as adjusted)
Assets		
Current assets:		
Cash and cash equivalents	\$ 85,346	\$ 148,113
Restricted cash	3,555	3,849
Accounts receivable	176,815	121,576
Contract assets	116,708	105,619
Prepaid expenses and other current assets	26,038	27,507
Inventories	5,735	4,112
Total current assets	414,197	410,776
Property, plant and equipment, net	159,423	123,480
Goodwill	2,807	2,807
Intangible assets and deferred costs, net	4,458	1,108
Other noncurrent assets	23,970	7,566
Total assets	<u>\$ 604,855</u>	<u>\$ 545,737</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable and accrued expenses	\$ 199,078	\$ 167,175
Accrued warranty	36,765	30,419
Current maturities of long-term debt	27,058	35,506
Contract liabilities	7,143	2,763
Total current liabilities	270,044	235,863
Long-term debt, net of debt issuance costs and current maturities	110,565	85,879
Other noncurrent liabilities	3,289	3,441
Total liabilities	383,898	325,183
Commitments and contingencies (Note 13)		
Stockholders' equity: (Note 4)		
Common shares, \$0.01 par value, 100,000 shares authorized and 34,745 shares issued and 34,678 shares outstanding at December 31, 2018; 100,000 shares authorized and 34,049 shares issued and 34,021 shares outstanding at December 31, 2017	347	340
Paid-in capital	311,771	301,543
Accumulated other comprehensive loss	(14,392)	(558)
Accumulated deficit	(74,981)	(80,260)
Treasury stock, at cost, 67 shares at December 31, 2018; 28 shares at December 31, 2017	(1,788)	(511)
Total stockholders' equity	220,957	220,554
Total liabilities and stockholders' equity	<u>\$ 604,855</u>	<u>\$ 545,737</u>

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Consolidated Income Statements
(In thousands, except per share data)

	Year Ended December 31,		
	2018	2017 (as adjusted)	2016 (as adjusted)
Net sales (Note 4)	\$ 1,029,624	\$ 955,198	\$ 769,019
Cost of sales	882,075	804,099	664,026
Startup and transition costs	74,708	40,628	18,127
Total cost of goods sold	956,783	844,727	682,153
Gross profit	72,841	110,471	86,866
General and administrative expenses	48,123	40,373	33,892
Income from operations	24,718	70,098	52,974
Other income (expense):			
Interest income	181	95	344
Interest expense	(10,417)	(12,381)	(17,614)
Loss on extinguishment of debt	(3,397)	—	(4,487)
Realized loss on foreign currency remeasurement	(13,489)	(4,471)	(757)
Miscellaneous income	4,650	1,191	238
Total other expense	(22,472)	(15,566)	(22,276)
Income before income taxes	2,246	54,532	30,698
Income tax benefit (provision)	3,033	(15,798)	(3,654)
Net income	5,279	38,734	27,044
Net income attributable to preferred stockholders	—	—	5,471
Net income attributable to common stockholders	\$ 5,279	\$ 38,734	\$ 21,573
Weighted-average common shares outstanding:			
Basic	34,311	33,844	17,530
Diluted	36,002	34,862	17,616
Net income per common share:			
Basic	\$ 0.15	\$ 1.14	\$ 1.23
Diluted	\$ 0.15	\$ 1.11	\$ 1.22

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Consolidated Statements of Comprehensive Income (Loss)
(In thousands)

	Year Ended December 31,		
	2018	2017	2016
		(as adjusted)	(as adjusted)
Net income	\$ 5,279	\$ 38,734	\$ 27,044
Other comprehensive income (loss):			
Foreign currency translation adjustments	(14,428)	3,304	(3,837)
Unrealized gain on hedging derivatives, net of taxes of \$158 for the year ended December 31, 2018	594	—	—
Comprehensive income (loss)	\$ (8,555)	\$ 42,038	\$ 23,207

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Consolidated Statements of Changes in Stockholders' Equity (Deficit)
(In thousands)

	Common		Paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Treasury stock, at cost	Total stockholders' equity (deficit)
	Shares	Amount					
Balance at December 31, 2015	4,238	\$ —	\$ —	\$ (25)	\$ (191,172)	\$ —	\$ (191,197)
Cumulative-effect adjustment of the adoption of Topic 606 on January 1, 2016	—	—	—	—	51,691	—	51,691
Net income	—	—	—	—	27,044	—	27,044
Other comprehensive loss	—	—	—	(3,837)	—	—	(3,837)
Redeemable preferred shares fair value adjustment	—	—	—	—	(5,471)	—	(5,471)
Issuance of common stock sold in initial public offering (IPO), net of underwriters discount and offering costs	7,188	72	67,127	—	—	—	67,199
Conversion of convertible preferred shares into common stock upon consummation of IPO	21,110	253	202,993	—	—	—	203,246
Conversion of subordinated convertible promissory notes into common stock upon consummation of IPO	1,080	11	11,866	—	—	—	11,877
Conversion of redeemable preferred share warrants into common stock upon consummation of IPO	121	1	1,083	—	—	—	1,084
Share-based compensation expense	—	—	9,764	—	—	—	9,764
Balance at December 31, 2016 (as adjusted)	33,737	337	292,833	(3,862)	(117,908)	—	171,400
Cumulative-effect adjustment of the adoption of ASU 2016-09 on January 1, 2017	—	—	1,072	—	(1,086)	—	(14)
Net income	—	—	—	—	38,734	—	38,734
Other comprehensive income	—	—	—	3,304	—	—	3,304
Common stock repurchased	—	—	—	—	—	(1,264)	(1,264)
Issuances under share-based compensation plan	312	3	674	—	—	753	1,430
Share-based compensation expense	—	—	6,964	—	—	—	6,964
Balance at December 31, 2017 (as adjusted)	34,049	340	301,543	(558)	(80,260)	(511)	220,554
Net income	—	—	—	—	5,279	—	5,279
Other comprehensive loss	—	—	—	(13,834)	—	—	(13,834)
Common stock repurchased	—	—	—	—	—	(2,859)	(2,859)
Issuances under share-based compensation plan	696	7	2,695	—	—	1,582	4,284
Share-based compensation expense	—	—	7,533	—	—	—	7,533
Balance at December 31, 2018	<u>34,745</u>	<u>\$ 347</u>	<u>\$311,771</u>	<u>\$ (14,392)</u>	<u>\$ (74,981)</u>	<u>\$ (1,788)</u>	<u>\$ 220,957</u>

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES

**Consolidated Statements of Cash Flows
(In thousands)**

	Year Ended December 31,		
	2018	2017 (as adjusted)	2016 (as adjusted)
Cash flows from operating activities:			
Net income	\$ 5,279	\$ 38,734	\$ 27,044
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Depreciation and amortization	26,429	21,698	13,186
Share-based compensation expense	7,795	7,124	9,902
Amortization of debt issuance costs and debt discount	336	573	4,681
Loss on extinguishment of debt	3,397	—	4,487
Loss on sale of assets	4,581	334	2
Deferred income taxes	(14,912)	1,650	(6,123)
Changes in assets and liabilities:			
Accounts receivable	(59,200)	(54,227)	5,564
Contract assets and liabilities	(7,898)	(4,423)	(17,227)
Inventories	(1,685)	964	(1,179)
Prepaid expenses and other current assets	1,186	3,150	681
Other noncurrent assets	(5,167)	2,816	(3,690)
Accounts payable and accrued expenses	32,263	51,474	17,424
Accrued warranty	6,346	9,330	6,709
Other noncurrent liabilities	(2,008)	(4,597)	(1,619)
Net cash provided by (used in) operating activities	(3,258)	74,600	59,842
Cash flows from investing activities:			
Purchases of property, plant and equipment	(52,688)	(44,828)	(30,507)
Proceeds from sale of assets	—	850	—
Net cash used in investing activities	(52,688)	(43,978)	(30,507)
Cash flows from financing activities:			
Proceeds from issuance of common stock sold in initial public offering, net of underwriters discount and offering costs	—	—	67,199
Proceeds from revolving and term loans	89,435	—	—
Repayments of revolving and term loans	(74,972)	(3,750)	(930)
Net proceeds from (repayments of) accounts receivable financing	424	(1,020)	(5,385)
Proceeds from working capital loans	—	9,936	15,813
Repayments of working capital loans	—	(14,574)	(20,103)
Net proceeds from (repayments of) other debt	(23,763)	1,313	(4,765)
Proceeds from customer advances	—	—	2,000
Repayments of customer advances	—	—	(2,000)
Debt issuance costs	(281)	(454)	—
Proceeds from exercise of stock options	4,284	1,430	—
Repurchase of common stock including shares withheld in lieu of income taxes	(2,859)	(1,264)	—
Net cash provided by (used in) financing activities	(7,732)	(8,383)	51,829
Impact of foreign exchange rates on cash, cash equivalents and restricted cash	617	335	(1,515)
Net change in cash, cash equivalents and restricted cash	(63,061)	22,574	79,649
Cash, cash equivalents and restricted cash, beginning of year	152,437	129,863	50,214
Cash, cash equivalents and restricted cash, end of year	\$ 89,376	\$ 152,437	\$ 129,863
Supplemental disclosures of cash flow information:			
Cash paid for interest	\$ 9,904	\$ 11,803	\$ 11,126
Cash paid for income taxes, net	7,246	17,263	8,506
Supplemental disclosures of noncash investing and financing activities:			
Conversion of subordinated convertible promissory notes into common stock	—	—	11,877
Accrued capital expenditures in accounts payable	5,139	5,725	2,664
Equipment acquired through capital lease and financing obligations	21,968	6,206	10,011
Debt refinance and related fees	—	—	2,163

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Note 1. Summary of Operations and Significant Accounting Policies

(a) 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 or we). 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 LCS Holding, Inc. and then changed its corporate name to TPI Composites, Inc. in 2008. Today, the Company is 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; Juárez, Mexico; Matamoros, Mexico; Izmir, Turkey; Kolding, Denmark and Chennai, India.

(b) Basis of Presentation

We divide our business operations into four geographic operating segments—the United States (U.S.), Asia, Mexico and 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 for the manufacture of 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 which commenced operations in the second quarter of 2018, (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 we expect to commence operations in the first quarter of 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 the third quarter of 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 expect to commence operations at this facility in the first quarter of 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 consolidated financial statements include the accounts of TPI Composites, Inc. and all majority owned subsidiaries. All significant intercompany transactions and balances have been eliminated.

As previously announced, effective January 1, 2018, we adopted Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers*, (Topic 606) using the full retrospective method as further described in *Recently Issued Accounting Pronouncements - Revenue from Contracts with Customers* and Note 2, *Revenue from Contracts with Customers*. All amounts and disclosures set forth in this Annual Report on Form 10-K reflect the adoption of Topic 606 and may differ, as disclosed in these notes, from amounts previously reported in our December 31, 2017 consolidated balance sheet and our consolidated income and cash flow statements for the years

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

ended December 31, 2017 and 2016. See Note 19, *Adjustments to Previously Reported Financial Statements from the Adoption of an Accounting Pronouncement*, for a further discussion of the adoption of Topic 606, including the impact on our previously reported consolidated financial statements.

(c) Public Offerings and Stock Split

In July 2016, we completed an initial public offering (IPO) of 7,187,500 shares of our common stock at a price of \$11.00 per share, which included 937,500 shares issued pursuant to the underwriters' over-allotment option. Certain of our existing stockholders, a non-employee director and executive officers purchased an aggregate of 1,250,000 shares of our common stock in the IPO included in the total issuance above. The net proceeds from the IPO were \$67.2 million after deducting underwriting discounts and offering expenses. Immediately prior to the closing of the IPO, all shares of the then-outstanding redeemable preferred shares converted into an aggregate of 21,110,204 shares of our common stock and the redeemable preferred share warrants converted on a net issuance basis into 120,923 shares of our common stock. In addition, concurrent with the closing of the IPO, certain subordinated convertible promissory notes in the aggregate principal and interest amount of \$11.9 million were converted into 1,079,749 shares of our common stock at the public offering price of \$11.00 per share.

Prior to the IPO, in July 2016, we amended our amended and restated certificate of incorporation to effect a 360-for-1 forward stock split of our common stock. As a result of the stock split, we have adjusted the share amounts authorized and issuable under the share-based compensation plans. All share and per share common stock information referenced throughout the consolidated financial statements and notes thereto have been retroactively adjusted to reflect this stock split. The stock split did not cause an adjustment to the par value of the authorized shares of our common stock.

In May 2017, we completed a secondary public offering of 5,075,000 shares of our common stock at a price of \$16.35 per share, which included 575,000 shares issued pursuant to the underwriters' option to purchase additional shares. All of the shares were sold by existing stockholders and certain of our executive officers. The selling stockholders received all of the net proceeds of \$78.8 million from the secondary public offering. We did not sell any shares and did not receive any of the proceeds from the offering and the costs paid by us in connection with the offering of \$0.8 million were recorded in general and administrative costs in the accompanying consolidated income statement.

(d) 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

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

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 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.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

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 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.

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 cost 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.

(e) 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 manufacture 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.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

(f) General and Administrative Expense

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 gains and losses on the sale of certain receivables, on a non-recourse basis under supply chain financing arrangements with our customers, to financial institutions and 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 included in general and administrative expenses. For the years ended December 31, 2018, 2017 and 2016, total research and development expenses totaled \$0.8 million, \$1.6 million and \$1.5 million, respectively.

For the year ended December 31, 2018, the realized loss 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 loss on the sale of other assets at our manufacturing facilities totaled \$4.6 million. There were no such amounts for the years ended December 31, 2017 and 2016.

(g) Cash and Cash Equivalents and Restricted Cash

Cash and cash equivalents include highly liquid investments that are readily convertible to known amounts of cash with original maturities of three months or less. The carrying value of cash and cash equivalents approximates fair value.

As of December 31, 2018 and 2017, our China locations collectively had unrestricted cash totaling \$28.9 million and \$46.3 million, respectively, in bank accounts in China. The Chinese government imposes certain restrictions on transferring cash out of China. The local governments in Turkey and Mexico impose no such restrictions on transferring cash out of the respective country.

As of December 31, 2018 and 2017, we had provided for cash deposits for letters of guarantee used for customs clearance related to our China locations totaling \$3.5 million and \$3.8 million, respectively. These amounts are reported as restricted cash in our consolidated balance sheets.

As of December 31, 2018 and 2017, we maintained a long-term deposit in interest bearing accounts, related to fully cash-collateralized letters of credit in connection an equipment lessor in Iowa, totaling \$0.5 million. See Note 9, *Other Noncurrent Assets*.

(h) Accounts Receivable

Trade accounts receivable are recorded at the invoiced amount and generally do not bear interest. We follow the allowance method of recognizing uncollectible accounts receivable, which recognizes bad debt expense based on a review of the individual accounts outstanding and prior history of uncollectible accounts receivable. Credit is extended based on evaluation of each of our customer's financial condition and is generally unsecured. Accounts receivable are generally due within 30 days and are stated net of an allowance for doubtful accounts in the consolidated balance sheets. Accounts are considered past due if outstanding longer than contractual payment terms. We record an allowance based on consideration of a number of factors, including the length of time trade accounts are past due, previous loss history, the credit-worthiness of individual customers, economic conditions affecting specific customer industries, and economic conditions in general. We charge-off accounts receivable after all reasonable collection efforts have been exhausted. We credit payments subsequently received on such receivables to bad debt expense in the period payment is received. We record delinquent finance charges on outstanding accounts receivables only if they are collected. We wrote off \$0.2 million during 2018, \$0.2 million during 2017 and \$0.5 million during 2016, and do not have any off-balance-sheet credit exposure related to our customers. See Note 5, *Accounts Receivable*.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

(i) Inventories

Inventories represent materials purchased that are not restricted to fulfillment of a specific contract and are measured at the lower of cost or net realizable value. Net realizable value is defined as the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. Cost is determined using the first-in, first-out method for such raw materials. Write-downs to reduce the carrying cost of obsolete, slow-moving, and unusable inventory to net realizable value are recognized in cost of goods sold. The effect of these write-downs establishes a new cost basis in the related inventory, which is not subsequently written up.

(j) Property, Plant and Equipment

Property, plant and equipment are stated at cost. Depreciation and amortization of property, plant, and equipment is calculated on the straight-line method over the estimated useful lives of the assets. See Note 7, *Property, Plant and Equipment, Net*.

	Estimated useful lives
Machinery and equipment	7–10 years
Buildings	20 years
Leasehold improvements	5 to 10 years, or the term of the lease, if shorter
Office equipment and software	3 to 5 years
Furniture	3 to 5 years
Vehicles	5 years

(k) Recoverability of Long-Lived Assets

We review property, plant and equipment and other long-lived assets in order to assess recoverability based on expected future undiscounted cash flows whenever events or circumstances indicate that the carrying value may not be recoverable. If the sum of the expected future net cash flows is less than the carrying value, an impairment loss is recognized. The impairment loss is measured as the amount by which the carrying value exceeds the fair value of the asset.

(l) Goodwill, Intangible Assets and Deferred Costs

Goodwill represents the excess of the acquisition cost of Composite Solutions, Inc. from True North Partners, LLC in 2004 over the fair value of identifiable assets acquired and liabilities assumed. Goodwill, which is entirely in the U.S. segment, is evaluated for impairment annually on October 31 and whenever events or circumstances make it likely that impairment may have occurred. In determining whether impairment has occurred, we use a two-step approach. Step one compares the fair value of the related reporting unit (calculated using the discounted cash flow method) to its carrying value. If the carrying value exceeds the fair value, there is a potential impairment and step two must be performed. Step two compares the carrying value of the reporting unit's goodwill to its implied fair value (i.e., fair value of reporting unit less the fair value of the unit's assets and liabilities, including identifiable intangible assets). If the implied fair value of goodwill is less than the carrying amount of goodwill, impairment is recognized for that difference. We may first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test. We performed our annual goodwill impairment test during 2018 and determined that it is more-likely-than-not that its fair value exceeds its carrying amount.

Our only intangible assets were acquired in a business acquisition and provide contractual or legal rights, or other future benefits that could be separately identified. Our valuation of identified intangible assets was based upon discounted cash flow estimates that require significant management judgment with respect to revenue and expense growth rates, changes in working capital, and the selection and use of the appropriate discount rate. The intangible assets are amortized over their estimated useful life. Intangible assets with indefinite lives are evaluated at least annually for impairment or whenever events or circumstances make it likely that impairment may have occurred.

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As a result of our adoption of Topic 606, we recognized an asset for deferred costs incurred to fulfill a contract when such costs meet certain criteria. These deferred costs are amortized over their estimated useful life. See Note 2, *Revenue From Contracts with Customers* for a further discussion of those deferred costs recognized as a result of the adoption of Topic 606. See Note 8, *Intangible Assets and Deferred Costs, Net*.

(m) Warranty Expense

We provide a limited warranty for our mold and wind blade products, 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 generally reversed against the current year warranty expense amount. See Note 10, *Accrued Warranty*.

(n) 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.

(o) Foreign Currency Translation Adjustments

Our reporting currency is the U.S. dollar. However, we have non-U.S. operating segments in our U.S., Mexico, Turkey and China operations

- The U.S. parent companies of our China and Mexico operations, which are wholly-owned subsidiaries of TPI Composites, Inc., maintain their books and records in U.S. dollars.
- Our Kolding, Denmark operation, which is a wholly-owned subsidiary of TPI Composites, Inc., maintains its books and records denominated in the local Danish currency, the Krone.
- Our Mexico operations maintain their books and records through multiple legal entities that are denominated in the local Mexican currency, the Peso.
- Our Turkey operations maintain their books and records in the local Turkish currency, the Lira.
- Our China operations maintain their books and records in the local Chinese currency, the Renminbi.

Foreign currency-denominated assets and liabilities are translated into U.S. dollars at exchange rates existing at the respective balance sheet dates. Results of operations of our foreign subsidiaries are translated at the average exchange rates during the respective periods. Foreign currency transaction gains and losses are reported in realized loss on foreign currency remeasurement in our consolidated income statements. Translation adjustments are reported in accumulated other comprehensive loss in our consolidated balance sheets. Currency translation adjustments for the years ended December 31, 2018, 2017 and 2016 amounted to a loss of \$14.4 million, a gain of \$3.3 million and a loss of \$3.8 million, respectively.

(p) Share-Based Compensation

We maintain two active incentive compensation plans: the 2008 Stock Option and Grant Plan and the Amended and Restated 2015 Stock Option and Incentive Plan (the 2015 Plan). In May 2015, our board of directors and stockholders adopted and approved the 2015 Plan, which 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 of our employees, non-employee directors and consultants. The term of stock options issued under the 2015 Plan may not exceed ten years from the date of grant. Under the 2015 Plan, incentive stock options and non-qualified stock options are granted at an exercise price that is not to be less than 100% of the fair market value of our common stock on the date of grant, as determined by the Compensation Committee of our board of directors. Stock options become vested and exercisable at such times and under such conditions as determined by the Compensation Committee on the date of grant. Upon approval of the 2015 Plan, no future grants will be made from the 2008 Stock Option and Grant Plan.

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We use the Black Scholes valuation model, unless the awards are subject to market conditions, in which case we utilize a binomial-lattice model (i.e., Monte Carlo simulation model), to determine the fair value of stock options and certain performance-based restricted stock units (PSUs) granted pursuant to the 2015 Plan. The Monte Carlo simulation model utilizes multiple input variables to determine the share-based compensation expense. For grants with market conditions made in the year ended December 31, 2018, we utilized a volatility of 31.1%, a 0% dividend yield and a risk-free interest rate of 2.4%. The volatility was based on the most recent comparable period for the Company and the peer group. The stock price projection for the Company and the components of the peer group assumes a 0% dividend yield. This is mathematically equivalent to reinvesting dividends in the issuing entity over the performance period. The risk-free interest rate is equal to the yield, as of the measurement date, of the zero-coupon U.S. Treasury bill that is commensurate with the remaining performance measurement period.

The determination of the grant date fair value using an option-pricing model and simulation model requires judgment as well as assumptions regarding a number of other complex and subjective variables. These variables include our closing market price at the grant date as well as the following assumptions:

Expected Volatility. As our common stock had not been publicly traded prior to July 2016, the expected volatility assumption reflects an average of volatilities of publicly traded peer group companies with a period equal to the expected life of the options.

Expected Life (years). We use the simplified method to estimate the expected term of stock options. The simplified method for estimating expected term is to use the mid-point between the vesting term and the contractual term of the option. We elected to use the simplified method because we did not have historical exercise data to estimate the expected term due to the limited time period our common stock had been publicly traded.

Risk-Free Interest Rate. The risk-free interest rate assumption is based upon the U.S. constant maturity treasury rates as the risk-free rate interpolated between the years commensurate with the expected life of the options.

Dividend Yield. The dividend yield assumption is zero since we do not expect to declare or pay dividends in the foreseeable future.

Forfeitures. Share-based compensation expense is reversed when the service-based award is forfeited.

Expected Vesting Period. We amortize the share-based compensation expense over the requisite service period.

Share-based compensation expense related to restricted stock units and PSUs are expensed over the vesting period using the straight-line method for our employees and our board of directors. The restricted stock units and PSUs do not have voting rights. We calculate the fair value of our share-based awards on the date of grant for our employees and directors. We calculate the fair value of our share-based awards to our consultants on the date of vesting.

(q) Leases

Leases are classified as either operating leases or capital leases. Assets acquired under capital leases are amortized on the same basis as similar property, plant and equipment. Rental payments, including rent holidays, leasehold incentives, and scheduled rent increases are expensed on a straight-line basis over the lease term including any applicable renewals. Leasehold improvements are amortized over the shorter of the depreciable lives of the corresponding fixed assets or the lease term including any applicable renewals.

(r) Financial Instruments

Interest Rate Swap

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

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

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 \$0.8 million as of December 31, 2018 and is included in other noncurrent assets in the consolidated balance sheet. The unrealized gain on the swap of \$0.6 million, net of tax, is included in the consolidated statement of other comprehensive income (loss).

Forward Contract

We use forward contracts to mitigate our exposure associated with fluctuations in foreign currency exchange rates. We do not use such forward contracts for speculative or trading purposes.

In August 2018, we provided a Turkish Lira denominated intercompany loan to an EMEAI subsidiary of \$15.0 million converted at the spot rate on the transaction date to 96.6 million Turkish Lira to fund their working capital requirements. We entered into a forward contract, with the same expiration as that of the intercompany loan's maturity in October 2018, for a notional amount of 101.5 million Turkish Lira to reduce our exposure to currency fluctuations from the settlement of this Turkish Lira denominated intercompany loan. The derivative instrument qualifies for accounting as a cash flow hedge in accordance with FASB ASC Topic 815, *Derivatives and Hedging*, and we designated it as such at inception. The forward contract was settled in October 2018.

(s) Income Taxes

Income taxes are accounted for under the asset and liability method in accordance with FASB ASC Topic 740, *Income Taxes*. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those differences are projected to be recovered or settled. Realization of deferred tax assets is dependent on our ability to generate sufficient taxable income of an appropriate character in future periods. A valuation allowance is established if it is determined to be more-likely-than-not that a deferred tax asset will not be realized. Interest and penalties related to unrecognized tax benefits are reported in income tax expense, See Note 15, *Income Taxes*.

(t) Net Income Attributable to Preferred Stockholders

Net income attributable to preferred stockholders relates to the accrual of dividends on our convertible and senior redeemable preferred shares, the accretion to redemption amounts on our convertible preferred shares and warrant fair value adjustment. Immediately prior to the closing of our IPO, all preferred shares were converted into shares of our common stock and as a result, the accrual of dividends ceased.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

(u) Net Income Per Share Calculation

The basic net income per common share is computed by dividing the net income 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 for the years ended December 31:

	<u>2018</u>	<u>2017</u>	<u>2016</u>
	(in thousands)		
Basic weighted-average shares outstanding	34,311	33,844	17,530
Effect of dilutive stock options and warrants	1,691	1,018	86
Diluted weighted-average shares outstanding	<u>36,002</u>	<u>34,862</u>	<u>17,616</u>

Share-based compensation awards of 30,000 shares were excluded from the computation of diluted net income per share for the year ended December 31, 2018 because their effect would be anti-dilutive. We did not have any potential dilutive securities which were excluded from the computation of diluted net income per share for the years ended December 31, 2017 and 2016.

(v) Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles (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 consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant items subject to such estimates and assumptions include the useful lives of property, plant and equipment, realizability of intangible assets, deferred costs and deferred tax assets, inventory valuation, relative selling prices and cost assumptions for revenue recognition, fair value of stock options, performance-based restricted stock units and warrants, warranty reserves and other contingencies.

(w) Fair Value of Financial Instruments

FASB ASC Topic 820, *Fair Value Measurements*, defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Topic 820 also specifies a fair value hierarchy that requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The standard describes three levels of inputs that may be used to measure fair value is follows:

Level 1: Quoted prices in active markets for identical assets or liabilities;

Level 2: Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and

Level 3: Valuation is generated from model-based techniques that use significant assumptions not observable in the market. These unobservable assumptions reflect our own estimate of assumptions that market participants would use in pricing the asset or liability.

The carrying amounts of cash and cash equivalents, trade accounts receivable, income taxes receivable, accounts payable and accrued expenses and income taxes payable approximate fair value because of the short-term nature of these financial instruments. The carrying amount of working capital loans approximates fair value due to their short term nature and the loans carry a current market rate of interest, a level 2 input. The carrying value of long-term debt approximates fair value based on its variable rate index or based upon market interest rates available to us for debt of similar risk and maturities, both of which are level 2 inputs.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

(x) Recently Issued Accounting Pronouncements

Accounting Pronouncements Adopted in 2018

Revenue from Contracts with Customers

In May 2014, the FASB issued Topic 606, which provides new recognition and disclosure requirements for revenue from contracts with customers that supersedes the existing revenue recognition guidance. The new recognition requirements focus on when the customer obtains control of the goods or services, rather than the current risks and rewards model of recognition. The core principle of the new standard is that an entity will recognize revenue when it transfers goods or services to its customers in an amount that reflects the consideration an entity expects to be entitled to for those goods or services. The new disclosure requirements included in these financial statements contain information intended to communicate the nature, amount, timing and any uncertainty of revenue and cash flows from the applicable contracts, including any significant judgments and changes in judgments and assets recognized from the costs to obtain or fulfill a contract.

We adopted Topic 606 as of January 1, 2018 with retrospective application to January 1, 2016 through December 31, 2017. See Note 2, *Revenue From Contracts with Customers* and Note 19, *Adjustments to Previously Reported Financial Statements from the Adoption of an Accounting Pronouncement*, for further discussion of the adoption of this standard, including the impact on our previously reported financial statements.

Cash Flow Presentation

In August 2016, the FASB issued ASU 2016-15, *Classification of Certain Cash Receipts and Cash Payments*, that clarifies how certain cash receipts and cash payments are presented and classified in the consolidated statements of cash flows. In addition, in November 2016, the FASB issued ASU 2016-18, *Restricted Cash*, that requires restricted cash and cash equivalents to be included with the amount of cash and cash equivalents that are reconciled on the consolidated statements of cash flows. We adopted these ASUs as of January 1, 2018 with retrospective application to each period presented.

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the consolidated balance sheets which total the same such amounts in the consolidated statements of cash flows:

	December 31,			
	2018	2017	2016	2015
	(in thousands)			
Cash and cash equivalents	\$ 85,346	\$ 148,113	\$ 119,066	\$ 45,917
Restricted cash	3,555	3,849	2,259	1,760
Restricted cash included within other noncurrent assets	475	475	8,538	2,537
Total cash, cash equivalents and restricted cash shown in the consolidated statements of cash flows	<u>\$ 89,376</u>	<u>\$ 152,437</u>	<u>\$ 129,863</u>	<u>\$ 50,214</u>

See Note 19, *Adjustments to Previously Reported Financial Statements from the Adoption of an Accounting Pronouncement*, for further discussion of the adoption of these standards, including the impact on our previously reported financial statements.

Income Taxes

In December 2017, the Securities and Exchange Commission (SEC) staff issued Staff Accounting Bulletin 118 (SAB 118), which provides relief for companies that have not completed their accounting for the effects of The Tax Cuts and Jobs Act (Tax Reform Act) but can determine a reasonable estimate of those effects to allow them to include a provisional amount based on their reasonable estimate in their financial statements. The guidance in SAB 118 also allows companies to adjust the provisional amounts during a one-year “measurement period” which is similar to the measurement period used when accounting for business combinations. In the accompanying consolidated financial statements, we have completed our accounting for all the tax effects associated with the enactment of the Tax Reform Act. See Note 15, *Income Taxes*, for further discussion.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Share-Based Compensation

In May 2017, the FASB issued ASU 2017-09, *Scope of Modification Accounting*, which provides guidance about which changes to terms or conditions of share-based payment awards requires an entity to apply the modification accounting of Topic 718, *Compensation-Stock Compensation*. This standard is effective for all entities for annual and interim periods beginning after December 15, 2017, with early adoption permitted. We adopted this standard on January 1, 2018 and it did not have a material effect on our consolidated financial statements.

Financial Instruments

In August 2017, the FASB issued ASU 2017-12, *Targeted Improvements to Accounting for Hedging Activities*, which simplifies the application of hedge accounting guidance, including eliminating the requirement to separately measure and report hedge ineffectiveness. This standard is effective for all public business entities for annual and interim periods beginning after December 15, 2018, with early adoption permitted. We adopted this standard on January 1, 2018 and it did not have a material effect on our consolidated financial statements.

Accounting Pronouncements Not Yet Adopted

Leases

In February 2016, the FASB established Topic 842, *Leases*, by 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 (ROU) that requires a lessee to recognize a ROU asset and lease liability on the balance sheet for all leases with a term longer than 12 months. Leases will be classified as finance or operating, with classification affecting the pattern and classification of expense recognition in the income statement.

This standard is effective for all public business entities for annual and interim periods beginning after December 15, 2018, with early adoption permitted. A modified retrospective transition approach is required, applying the new standard to all leases existing at the date of initial application. An entity may choose to use either (1) its effective date or (2) the beginning of the earliest comparative period presented in the financial statements as its date of initial application. We will adopt this new standard on January 1, 2019 and use the effective date as our date of initial application. Consequently, financial information will not be updated and the disclosures required under the new standard will not be provided for dates and periods before January 1, 2019.

The new standard provides a number of optional practical expedients in transition. We expect to elect 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. We do not expect to elect the use-of-hindsight or the practical expedient pertaining to land easements, the latter not being applicable to us.

We expect that this standard will have a material effect on our financial statements. While we continue to assess all of the effects of adoption, we currently believe the most significant effects relate to the recognition of new 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.

On adoption, we currently expect to recognize additional operating liabilities of approximately \$135 million, with corresponding ROU assets of approximately the same amount based on the present value of the remaining minimum rental payments under current leasing standards for existing operating leases.

The new standard also provides practical expedients for an entity's ongoing accounting. We currently expect to elect the short-term lease recognition exemption for all leases that qualify. Accordingly, for those leases that qualify, we will not recognize ROU assets or lease liabilities, and this includes not recognizing ROU assets or lease liabilities for existing short-term leases of those assets in transition. We also currently expect to elect the practical expedient to not separate lease and non-lease components for all of our leases.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

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. This standard is effective for all entities for annual and interim periods beginning after December 15, 2018, with early adoption permitted. We will adopt this standard on January 1, 2019 and do not expect that it will have a material impact on our 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. This standard is effective for all public business entities for annual and interim periods beginning after December 15, 2018. Early adoption is permitted, but no earlier than our adoption date of Topic 606. We will adopt this standard on January 1, 2019 and do not expect that it will have a material impact on our 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. This standard is effective for all public business entities for annual periods beginning after December 15, 2018. We will adopt this standard on January 1, 2019 and are currently evaluating the impact of the adoption of this standard on our consolidated financial statements.

There have been no other recent accounting pronouncements or changes in accounting pronouncements during the current year that are of significance, or potential significance, to us.

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:

	Year Ended December 31, 2018				
	U.S.	Asia	Mexico	EMEI	Total
	(in thousands)				
Wind blade sales	\$ 126,335	\$ 264,417	\$ 256,101	\$ 286,414	\$ 933,267
Precision molding and assembly systems sales	5,034	36,616	7,203	—	48,853
Transportation sales	29,254	—	—	—	29,254
Other sales	3,093	5,222	5,452	4,483	18,250
Total net sales	<u>\$ 163,716</u>	<u>\$ 306,255</u>	<u>\$ 268,756</u>	<u>\$ 290,897</u>	<u>\$ 1,029,624</u>

	Year Ended December 31, 2017				
	U.S.	Asia	Mexico	EMEI	Total
	(in thousands)				
Wind blade sales	\$ 164,870	\$ 346,200	\$ 200,355	\$ 179,100	\$ 890,525
Precision molding and assembly systems sales	8,445	18,408	760	—	27,613
Transportation sales	14,020	—	—	—	14,020
Other sales	3,690	7,912	5,448	5,990	23,040
Total net sales	<u>\$ 191,025</u>	<u>\$ 372,520</u>	<u>\$ 206,563</u>	<u>\$ 185,090</u>	<u>\$ 955,198</u>

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

	Year Ended December 31, 2016				
	U.S.	Asia	Mexico (in thousands)	EMEA	Total
Wind blade sales	\$ 163,926	\$ 287,398	\$ 122,712	\$ 138,358	\$ 712,394
Precision molding and assembly systems sales	17,683	17,846	363	—	35,892
Transportation sales	7,552	—	—	—	7,552
Other sales	2,702	4,317	4,945	1,217	13,181
Total net sales	\$ 191,863	\$ 309,561	\$ 128,020	\$ 139,575	\$ 769,019

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 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 consolidated balance sheets and are reduced as we record revenue over time.

These contract assets and liabilities are reported on the 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:

	December 31,		\$ Change
	2018	2017	
	(in thousands)		
Gross contract assets	\$ 127,568	\$ 112,557	\$ 15,011
Less: reclassification from contract liabilities	(10,860)	(6,938)	(3,922)
Contract assets	\$ 116,708	\$ 105,619	\$ 11,089

	December 31,		\$ Change
	2018	2017	
	(in thousands)		
Gross contract liabilities	\$ 18,003	\$ 9,701	\$ 8,302
Less: reclassification to contract assets	(10,860)	(6,938)	(3,922)
Contract liabilities	\$ 7,143	\$ 2,763	\$ 4,380

Contracts assets increased by \$11.1 million from December 31, 2017 to December 31, 2018 due to incremental unbilled production during the year ended December 31, 2018. Contracts liabilities increased by \$4.4 million from December 31, 2017 to December 31, 2018 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 year ended December 31, 2018.

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.

TPI COMPOSITES, INC. AND SUBSIDIARIES

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For the year ended December 31, 2018, we recognized \$2.8 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 transaction price of firm orders for which work has not been performed and excludes any unexercised contract options.

For the year ended December 31, 2018, net revenue recognized from our performance obligations satisfied in previous periods decreased by \$12.7 million. This primarily relates to changes in certain of our estimated total contract values and related percentage of completion estimates.

As of December 31, 2018, the aggregate amount of the transaction price allocated to the remaining performance obligations to be satisfied in future periods was approximately \$5.6 billion. We estimate that we will recognize the remaining performance obligations as revenue as follows: 27 percent in 2019, 28 percent in 2020, 20 percent in 2021, 15 percent in 2022 and the remaining 10 percent in 2023.

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 December 31, 2018, the cost and accumulated amortization of such assets totaled \$5.6 million and \$2.1 million, respectively. As of December 31, 2017, the cost and accumulated amortization of such assets totaled \$2.4 million and \$1.4 million, respectively. These amounts are included in intangible assets and deferred costs, net in the consolidated balance sheet. See Note 8, *Intangible Assets and Deferred Costs, Net*.

In applying the practical expedient as permitted under Topic 606, we recognize the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the asset that we otherwise would have recognized is one year or less. These costs are included in cost of goods sold.

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 16, *Concentration of Customers*.

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 2018 and 2017. At December 31, 2018 and 2017, we had \$53.7 million and \$98.9 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 December 31, 2018, this includes \$1.0 million in Turkey, \$28.9 million in China and \$1.7 million in Mexico. We have not experienced losses in these accounts. In addition, we have short-term deposits in interest bearing accounts of \$3.5 million in China, which are reported as restricted cash in our consolidated balance sheets. We also have long-term deposits in interest bearing accounts of \$0.5 million in Iowa. See Note 9, *Other Noncurrent Assets*.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Note 4. Related-Party Transactions

Related party transactions include transactions between us and certain of our affiliates. The following transactions were in the normal course of operations and were measured at the exchange amount, which is the amount of consideration established and agreed to by the parties.

We have previously entered into several agreements with subsidiaries of General Electric Company and its consolidated affiliates (GE) relating to the operation of its business. As a result of these agreements, GE has been a debtor, creditor and holder of both our preferred and common shares. During the second quarter of 2017, GE reduced its holdings of our common shares to less than five percent of the total shares outstanding and then completely divested of our common shares during the third quarter of 2017.

We have entered into five separate supply agreements with GE to manufacture wind blades in Newton, Iowa; Taicang Port, China; Juárez, Mexico (2) and Izmir, Turkey. The supply agreements in Taicang Port, China and Izmir, Turkey expired on December 31, 2017. For the six months ended June 30, 2017, we recorded related-party sales with GE of \$198.6 million. As disclosed in Note 16, *Concentration of Customers*, for the year ended December 31, 2016, we recorded related-party sales with GE of \$372.3 million.

In January 2016, we entered into an agreement with GE and received an advance of \$2.0 million, which we repaid in full in August 2016.

Certain of our existing stockholders, consisting of entities associated with Element Partners, Angeleno Group and Landmark Partners, each of which is an affiliate of a member of our board of directors, as well as certain of our executive officers and a director, purchased an aggregate of 1,250,000 shares of our common stock in the IPO. In addition, all outstanding obligations and accrued interest under our subordinated convertible promissory notes held by certain of our existing stockholders, including Element Partners, Angeleno Group and Landmark Partners, were converted into an aggregate of 1,079,749 shares of our common stock concurrent with the closing of the IPO at the public offering price of \$11.00 per share.

In connection with our secondary offering in May 2017, certain entities associated with Element Partners, Angeleno Group, Landmark Partners and NGP Energy Technology Partners, L.P, as well as certain of our executive officers sold an aggregate of 5,075,000 shares of our common stock at the public offering price of \$16.35 per share.

Note 5. Accounts Receivable

Accounts receivable at December 31 consisted of the following:

	2018	2017
	(in thousands)	
Trade accounts receivable	\$ 172,667	\$ 117,794
Other accounts receivable	4,148	3,782
Total accounts receivable	<u>\$ 176,815</u>	<u>\$ 121,576</u>

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Note 6. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets at December 31 consisted of the following:

	<u>2018</u>	<u>2017</u>
	(in thousands)	
Refundable value-added tax	\$ 11,160	\$ 11,507
Prepaid customs and duty charges	495	280
Deposits	5,659	4,585
Other prepaid expenses	8,724	10,357
Other current assets	—	778
Total prepaid expenses and other current assets	<u>\$ 26,038</u>	<u>\$ 27,507</u>

Note 7. Property, Plant and Equipment, Net

Property, plant and equipment, net at December 31 consisted of the following:

	<u>2018</u>	<u>2017</u>
	(in thousands)	
Machinery and equipment	\$ 119,737	\$ 100,681
Buildings	15,080	14,711
Leasehold improvements	38,747	21,853
Office equipment and software	26,363	18,664
Furniture	19,579	19,017
Vehicles	287	294
Construction in progress	17,390	10,687
Total property, plant and equipment, gross	237,183	185,907
Accumulated depreciation	(77,760)	(62,427)
Total property, plant and equipment, net	<u>\$ 159,423</u>	<u>\$ 123,480</u>

As of December 31, 2018, we had undertaken projects including the construction and outfitting of our Matamoros, Mexico facility, our Yangzhou, China facility, the expansion and improvements at certain of our existing wind blade production facilities and costs at our corporate office to enhance our information technology systems.

Total depreciation for the years ended December 31, 2018, 2017 and 2016 was \$25.5 million, \$20.8 million and \$12.7 million, respectively.

As of December 31, 2018, the cost and accumulated depreciation of property, plant and equipment that we are leasing under capital lease arrangements is \$41.3 million and \$11.7 million, respectively. As of December 31, 2017, the cost and accumulated depreciation of property, plant and equipment that we are leasing under capital lease arrangements is \$29.7 million and \$8.0 million, respectively.

Note 8. Intangible Assets and Deferred Costs, Net

Carrying values and estimated useful lives of intangible assets and deferred costs as of December 31, 2018, consisted of the following:

	<u>Estimated Useful Life</u>	<u>Cost</u>	<u>Accumulated Amortization</u>	<u>Net</u>
		(in thousands)		
Pre-production investments ⁽¹⁾	Various	\$ 5,598	\$ (2,111)	\$ 3,487
License	5 years	1,000	(179)	821
Trademarks	Indefinite	150	—	150
Total intangible assets and deferred costs, net		<u>\$ 6,748</u>	<u>\$ (2,290)</u>	<u>\$ 4,458</u>

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Carrying values and estimated useful lives of intangible assets and deferred costs as of December 31, 2017, consisted of the following:

	Estimated Useful Life	Cost	Accumulated Amortization (in thousands)	Net
Pre-production investments ⁽¹⁾	Various	\$ 2,387	\$ (1,429)	\$ 958
Trademarks	Indefinite	150	—	150
Total intangible assets and deferred costs, net		<u>\$ 2,537</u>	<u>\$ (1,429)</u>	<u>\$ 1,108</u>

- (1) See Note 2, *Revenue From Contracts with Customers*, for a further discussion of these pre-production investments.

During the years ended December 31, 2018, 2017 and 2016, we recorded amortization expense for the intangible assets and deferred costs of \$0.9 million, \$0.9 million and \$0.4 million, respectively.

Note 9. Other Noncurrent Assets

Other noncurrent assets at December 31 consisted of the following:

	2018	2017
	(in thousands)	
Restricted cash	\$ 475	\$ 475
Deferred tax assets	15,296	1,740
Land use right	2,378	1,708
Deposits	3,845	3,237
Other	1,976	406
Total other noncurrent assets	<u>\$ 23,970</u>	<u>\$ 7,566</u>

As of December 31, 2018 and 2017, we maintained long-term deposits in interest bearing accounts related to fully cash-collateralized letter of credit in connection with an equipment lessor in Iowa totaling approximately \$0.5 million.

The historical land use right asset was purchased during 2007 and permits us to use the land where the Taicang Port, China facility, owned by us, is situated. Amortization of the land use right began upon the opening of the plant in 2008. An additional land use right asset was purchased during 2018 which permits us to use additional land where the Taicang Port, China facility is situated. We are amortizing both these land use rights on a straight-line basis over their 50 year lives.

Note 10. Accrued Warranty

Warranty accrual at December 31 consisted of the following:

	2018	2017	2016
	(in thousands)		
Warranty accrual at beginning of year	\$ 30,419	\$ 21,089	\$ 14,380
Accrual during the year	14,605	15,443	19,279
Cost of warranty services provided during the year ⁽¹⁾	(4,457)	(1,986)	(10,808)
Reduction of reserves	(3,802)	(4,127)	(1,762)
Warranty accrual at end of year	<u>\$ 36,765</u>	<u>\$ 30,419</u>	<u>\$ 21,089</u>

- (1) The 2016 amount includes an 8.0 million Euro (\$8.5 million) payment related to a settlement agreement with a customer.

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Note 11. Share-Based Compensation

Since 2015, we have granted awards of stock options, restricted stock units (RSUs) and performance-based restricted stock units to certain employees and non-employee directors under the 2015 Plan. Each award granted prior to the consummation of our IPO included a performance condition that required the completion of an initial public offering by us and a required vesting period of one to four years commencing upon achievement of the performance condition. As the IPO was consummated in July 2016, we began recording compensation expense in July 2016 for the requisite service period from the grant date through the IPO date with the balance of the share-based compensation to be expensed over the remaining vesting period.

Upon completion of the IPO and the achievement of the performance condition in 2016, we recorded share-based compensation expense for the requisite service period from the grant date which included approximately \$3.6 million related to the portion of the service period from the grant date through December 31, 2015.

The share-based compensation expense recognized in the consolidated income statements for the years ended December 31 was as follows:

	2018	2017	2016
	(in thousands)		
Cost of goods sold	\$ 1,281	\$ 1,070	\$ 1,505
General and administrative expenses	6,514	6,054	8,397
Total share-based compensation expense	\$ 7,795	\$ 7,124	\$ 9,902

The share-based compensation expense recognized by award type for the years ended December 31 was as follows:

	2018	2017	2016
	(in thousands)		
RSUs	\$ 4,209	\$ 2,808	\$ 3,457
Stock options	2,463	4,316	6,445
PSUs	1,123	—	—
Total share-based compensation expense	\$ 7,795	\$ 7,124	\$ 9,902

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

	Stock Options			RSUs		PSUs		
	Shares Available for Grant	Shares	Weighted-Average Exercise Price	Options Exercisable	Shares	Weighted-Average Grant Date Fair Value	Shares	Weighted-Average Grant Date Fair Value
Balance as of December 31, 2015	3,392,141	3,261,663	\$ 11.90	35,703	731,880	\$ 10.89	—	\$ —
Increase in shares authorized	169,546	—	—	—	—	—	—	—
Granted	(493,990)	493,990	17.37	—	—	—	—	—
Exercised/vested	—	—	—	—	—	—	—	—
Forfeited/cancelled	519,995	(424,235)	11.78	(95,760)	10.87	—	—	—
Balance as of December 31, 2016	3,587,692	3,331,418	12.72	25,828	636,120	10.90	—	—
Increase in shares authorized	1,349,475	—	—	—	—	—	—	—
Granted	(433,700)	213,200	19.70	220,500	22.42	—	—	—
Exercised/vested	—	(138,878)	10.83	(218,040)	10.95	—	—	—
Forfeited/cancelled	227,650	(202,450)	11.54	(25,200)	10.87	—	—	—
Balance as of December 31, 2017	4,731,117	3,203,290	13.34	890,433	613,380	15.02	—	—
Increase in shares authorized	1,360,826	—	—	—	—	—	—	—
Granted	(451,212)	9,652	22.67	149,012	23.37	292,548	22.67	—
Exercised/vested	—	(354,153)	12.10	(298,036)	13.03	—	—	—
Forfeited/cancelled	339,874	(258,095)	14.72	(38,480)	21.51	(43,299)	22.67	—
Balance as of December 31, 2018	<u>5,980,605</u>	<u>2,600,694</u>	13.41	1,415,948	<u>425,876</u>	18.75	<u>249,249</u>	22.67

The grant date fair value of RSUs which vested during the years ended December 31, 2018 and 2017 was \$3.9 million and \$2.4 million, respectively. In addition, during 2018 and 2017, we repurchased 100,891 and 68,815 shares for \$2.9 million and \$1.3 million, respectively, related to tax withholding requirements on vested RSU awards.

The following table summarizes the outstanding and exercisable stock option awards as of December 31, 2018:

Range of Exercise Prices:	Options Outstanding			Options Exercisable	
	Shares	Weighted-Average Remaining Contractual Life (in years)	Weighted-Average Exercise Price	Shares	Weighted-Average Exercise Price
\$8.49	16,397	1.6	\$ 8.49	16,397	\$ 8.49
\$10.87	1,603,722	6.4	10.87	859,549	10.87
\$11.00 to \$16.53	495,601	7.1	16.10	331,800	16.31
\$17.68 to \$18.70	276,107	7.5	18.67	150,833	18.67
\$18.77 to \$22.67	208,867	8.7	19.97	57,369	19.93
\$8.49 to \$22.67	<u>2,600,694</u>	6.8	13.41	<u>1,415,948</u>	13.32

The following table contains additional information pertaining to stock options for the years ended December 31:

	2018	2017	2016
	(in thousands)		
Total intrinsic value of stock options outstanding	\$ 29,045	\$ 22,804	\$ 12,251
Total intrinsic value of stock options exercisable	15,949	6,688	195
Cash received from the exercise of stock options	4,284	1,430	—
Fair value of stock options vested	4,566	4,931	—

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As of December 31, 2018, the unamortized cost of the outstanding RSUs and PSUs was \$3.4 million and \$3.1 million, respectively, which we expect to recognize in the consolidated financial statements over weighted-average periods of approximately 1.6 years and 2.2 years, respectively. Additionally, the total unrecognized cost related to non-vested stock option awards was \$1.6 million, which we expect to recognize in the consolidated financial statements over a weighted-average period of approximately 1.4 years.

As of December 31, 2017, the unamortized cost of the outstanding RSUs was \$5.0 million, which we expected to recognize in the consolidated financial statements over a weighted-average period of approximately 1.5 years. Additionally, the total unrecognized cost related to non-vested stock option awards was \$4.8 million, which we expected to recognize in the consolidated financial statements over a weighted-average period of approximately 1.8 years.

As of December 31, 2016, the unamortized cost of the outstanding RSUs was \$2.8 million, which we expected to recognize in the consolidated financial statements over a weighted-average period of approximately 1.8 years. Additionally, the total unrecognized cost related to non-vested stock option awards was \$7.3 million, which we expected to recognize in the consolidated financial statements over a weighted-average period of approximately 2.1 years.

The fair value of the stock options granted during the years ended December 31 were calculated using the Black-Scholes option pricing model with the following assumptions:

	2018	2017	2016
Weighted-average fair value	\$ 10.36	\$ 9.10	\$ 5.14
Expected volatility	42.8%	45.0%	45.2%
Expected life	6.3 years	6.3 years	6.3 years
Risk-free interest rate	2.7%	1.5%	0.9%
Dividend yield	0.0%	0.0%	0.0%

Note 12. Long-Term Debt, Net of Debt Issuance Costs and Current Maturities

Long-term debt, net of debt issuance costs and current maturities, as of December 31 consisted of the following:

	2018	2017
	(in thousands)	
Senior term loan—U.S.	\$ —	\$ 71,250
Senior revolving loan—US	90,414	2,820
Accounts receivable financing—EMEAI	14,524	14,100
Equipment financing—EMEAI	12,197	16,901
Equipment capital lease—U.S.	111	536
Equipment capital lease—EMEAI	6,738	5,058
Equipment capital lease—Mexico	14,517	12,844
Equipment loan—Mexico	—	47
Total debt - principal	138,501	123,556
Less: Debt issuance costs	(878)	(2,171)
Total debt, net of debt issuance costs	137,623	121,385
Less: Current maturities of long-term debt	(27,058)	(35,506)
Long-term debt, net of debt issuance costs and current maturities	<u>\$ 110,565</u>	<u>\$ 85,879</u>

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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, 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 accompanying 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 December 31, 2018), 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 December 31, 2018, there was \$90.4 million outstanding under the Credit Agreement.

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:

EMEI: 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. As of December 31, 2017, there was \$6.8 million of accounts receivable financing and no unsecured financing outstanding. During the fourth quarter of 2018, we replaced the accounts receivable financing facility with the accounts receivable assignment agreement discussed below. As of 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 decreased to \$0.6 million. No amounts were outstanding under this agreement as of December 31, 2018 or 2017.

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In 2016, we entered into a general credit agreement, as amended, with a Turkish financial institution to provide up to 31.0 million Euro (approximately \$35.5 million as of December 31, 2018) of short-term financing of which 15.0 million Euro (approximately \$17.2 million as of December 31, 2018) is collateralized financing based on invoiced accounts receivables of two of our customers in Turkey, 15.0 million Euro (approximately \$17.2 million as of December 31, 2018) for the collateralized financing of capital expenditures and 1.0 million Euro (approximately \$1.2 million as of December 31, 2018) 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 9.0% as of December 31, 2018 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 December 31, 2018) 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 December 2018. As of December 31, 2018 and 2017, there was \$12.2 million and \$16.9 million outstanding under the collateralized financing of capital expenditures line, respectively. Additionally, as of December 31, 2018 and 2017, there was \$14.5 million and \$7.3 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 \$18.9 million as of December 31, 2018) of collateralized financing on invoiced accounts receivable of one of our customers in Turkey. Interest accrues at a fixed rate of 4.5% and is paid quarterly. The credit agreement does not have a maturity date, however the limit will be reviewed in October of each year. 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 \$30.6 million as of December 31, 2018) 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 December 31, 2018) and can be paid monthly, quarterly or at the time of the debt's maturity (extended to January 2020). As of December 31, 2018 and 2017, there were 92.8 million Renminbi (approximately \$13.5 million) and 127.0 million Renminbi (approximately \$19.5 million) of letters of guarantee used for customs clearance outstanding, respectively.

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 \$14.6 million as of December 31, 2018) of which 70.0 million Renminbi (approximately \$10.2 million as of December 31, 2018) can be used as customs letters of guarantee and 30.0 million Renminbi (approximately \$4.4 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 December 31, 2018) and can be paid monthly, quarterly or at the time of the debt's maturity (in March 2023). As of December 31, 2018, there were no amounts outstanding under this credit agreement.

Equipment Leases and Other Arrangements:

U.S.: In 2014, we entered into a lease agreement, as amended, with a leasing company for the lease of up to \$5.4 million of machinery and equipment at our Iowa facility. The lease included an implied effective interest rate of 4.3% annually and required monthly payments during each 24 month term. The amounts outstanding under this agreement as of December 31, 2018 and 2017, were \$0.1 million and \$0.5 million, respectively.

EMEI: In 2013, we entered into a finance lease agreement with a financial institution in Turkey for the initial lease of up to \$4.9 million of machinery, equipment and building improvements at our first Turkey facility. The term of the lease was for four years at an effective interest rate of 6.0%. The loan was to be repaid in monthly installments through 2017. The financing agreement was subsequently amended in 2017 to include our second Turkey facility and increase the amount of machinery, equipment and building improvements available for lease to \$10.0 million. As a result of the amendment, the loan is to be repaid in monthly installments through 2022. All other

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financing agreement terms remained the same. The balance outstanding as of December 31, 2018 and 2017 was \$6.7 million and \$5.1 million, respectively.

Mexico: In 2016, we entered into a lease agreement, as amended, with a leasing company for the lease of up to \$10.0 million of machinery and equipment at our second Mexico facility. The lease includes an implied effective interest rate of 4.3% annually and requires monthly payments during each 24 month term. The amounts outstanding under this agreement as of December 31, 2018 and 2017 were \$0.7 million and \$5.0 million, respectively.

In March 2017, we entered into a sale-lease agreement with a leasing company for the initial lease of up to \$12.0 million of machinery and equipment at our third Mexico facility. The lease includes an implied effective interest rate of 4.3% annually and requires monthly payments during each 24 month term. The amounts outstanding under this agreement as of December 31, 2018 and 2017 were \$3.2 million and \$7.4 million, respectively.

In March 2018, we entered into a sale-lease agreement with a leasing company for the initial lease of up to \$15.0 million of machinery and equipment at our Matamoros, Mexico facility. The lease includes an implied effective interest rate of 6.7% annually and requires monthly payments during each 48 month term. The amount outstanding under this agreement as of December 31, 2018 was \$10.5 million.

Costs associated with the issuance of debt are presented net of the related debt and are amortized over the term of the debt using the effective interest rate method. For the years ended December 31, 2018, 2017 and 2016, \$0.3 million, \$0.6 million and \$1.7 million of debt issuance costs were amortized to interest expense in our consolidated income statements, respectively.

The average interest rate on our short-term borrowings as of December 31, 2018 and 2017 was approximately 7.7% and 5.9%, respectively.

The future aggregate annual principal maturities of debt at December 31, 2018, are as follows (in thousands):

2019	\$ 27,058
2020	8,370
2021	8,423
2022	3,938
2023	90,712
Total debt - principal	<u>\$ 138,501</u>

Note 13. Commitments and Contingencies

(a) Operating Leases

We lease various facilities and equipment under noncancelable operating leases with terms ranging from 12 months to 120 months. Scheduled rent increases are recorded on a straight-line basis over the entire term of the lease.

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Rental expense charged under all operating leases (including leases with terms of less than one year) was \$25.5 million, \$19.3 million and \$11.5 million for the years ended December 31, 2018, 2017 and 2016, respectively. Future minimum lease payments under noncancelable operating leases with terms of one year or more as of December 31, 2018 are as follows (in thousands):

2019	\$	28,173
2020		26,871
2021		22,942
2022		22,065
2023		21,583
Thereafter		61,049
Total future minimum lease payments	\$	<u>182,683</u>

(b) Common Stock Warrants

In connection with the note purchase agreement dated December 29, 2014, for the purchase of \$10.0 million of subordinated convertible promissory notes, a minimum of 160,424 warrants were issued to purchase common stock with an exercise price equal to the lesser of \$24.30 or 85% of the IPO price of \$11.00 per share, accordingly, after the IPO, the exercise price was \$9.35. The warrants were immediately exercisable and expired no later than eight years from the date of issuance. The unamortized fair value of the warrants was expensed upon conversion of the convertible promissory notes concurrent with the IPO. These warrants were all exercised during 2018.

(c) Legal Proceedings

From time to time, we may be involved in disputes or litigation relating to claims arising out of its 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 August 2015, we entered into a transition agreement with our former Senior Vice President – Asia, pursuant to which that individual transitioned out of this role at the end of 2015 and was to serve in a consulting capacity in 2016 and 2017. In January 2016, following our discovery that the individual had materially violated the terms of the transition agreement, we terminated the consultancy for cause. In April 2016, an arbitration claim was filed in China by the individual with the Taicang Labor and Personnel Dispute Arbitration Committee alleging that we improperly terminated the transition agreement. The individual is demanding that we honor the terms of the transition agreement and pay compensation and fees under the transition agreement, which in the aggregate totals approximately \$2.6 million. In addition, the individual is also challenging the validity of our termination of an option to purchase 164,880 shares of our common stock and 77,760 restricted stock units awarded under the 2015 Plan, which were canceled in January 2016 when the consultancy was terminated. The Taicang Labor and Personnel Dispute Arbitration Committee awarded damages to the individual of approximately \$1.2 million but rejected the claims regarding the termination of the stock option and restricted stock unit awards. We subsequently appealed the arbitration award in favor of the individual to the Taicang Municipal People’s Court, which affirmed the arbitration award in June 2018. We appealed this judgment to an appellate level court in the Jiangsu Province and the appellate court affirmed the judgment of the Taicang Municipal People’s court and we paid the judgement award in the fourth quarter of 2018. We currently are evaluating whether to further appeal this matter.

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

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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. A hearing date has been set for June 2019 and the matter remains pending.

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.

(d) Insurance/Self-Insurance

We use a combination of insurance and self-insurance for a number of risks, including claims related to our employee health care, workers' compensation and general liability. Liabilities associated with these risks are estimated based on, among other things, historical claims experience, severity factors, and other actuarial assumptions. Our loss exposure related to self-insurance is limited by stop loss coverage on a per occurrence and aggregate basis. We regularly analyze our reserves for incurred but not reported claims, and for reported but not paid claims related to our self-funded insurance programs. While we believe our reserves are adequate, significant judgment is involved in assessing these reserves such as assessing historical paid claims, average lags between the claims' incurred date, reported dates and paid dates, and the frequency and severity of claims. There may be differences between actual settlement amounts and recorded reserves and any resulting adjustments are included in expense once a probable amount is known.

(e) Dividend Restrictions

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) 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, we 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.

(f) Collective Bargaining Agreements

In 2016, we entered into a three-year collective bargaining agreement with certain of our employees at our first Turkey facility. The agreement resulted in an average increase in pay of approximately 20% for employees covered by the agreement. In addition, beginning in July 2017, this collective bargaining arrangement also covered similarly situated employees at our second Turkey facility. In March 2018, we entered into a collective bargaining agreement with a labor union for certain of our employees at the Matamoros, Mexico facility. Currently, there are no other employees covered by collective bargaining agreements. We believe that our relations with employees are good, and there have been no major work stoppages in recent years.

Note 14. Defined Contribution Plan

We maintain a 401(k) plan for all of our U.S. employees. Under the 401(k) plan, eligible employees may contribute, subject to statutory limitations, a percentage of their salaries. We currently match 50 percent of the participants' contributions up to eight percent of eligible compensation.

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Participant vesting occurs in our matching contributions according to the schedule below:

Years of service	Vesting Percentage
1-year anniversary	34%
2-year anniversary	66%
3-year anniversary	100%

Our matching contributions to the 401(k) plan were \$0.6 million, \$0.6 million and \$0.3 million for the years ended December 31, 2018, 2017 and 2016, respectively. Our matching contributions are accrued and recorded as expense during each payroll period. Effective January 1, 2017, we changed the 401(k) plan to include an auto enrollment feature, increased our match from 25% of the first 8% to 50% of the first 8% and reduced the vesting period from six years to three years.

In Mexico, we maintain an annual savings fund, which matches the employee contribution each week, based on the Mexican statutory maximum of 13% of actual minimum salary rates. The savings fund period runs from November to October each year, and is distributed to employees in full, during the first week of November each year. For the years ended December 31, 2018, 2017 and 2016, we incurred matched savings expense of \$0.2 million, \$1.3 million and \$0.6 million, respectively.

In Turkey, we maintain a retirement fund that is based on a formula of annual salary multiplied by the number of years of service with us. We accrue a retirement fund liability for this each month. As of December 31, 2018 and 2017, we accrued \$1.0 million and \$1.5 million, respectively, based on the service periods of eligible employees greater than one year.

Note 15. Income Taxes

Geographic sources of income (loss) before income taxes are as follows for the years ended December 31:

	2018	2017	2016
	(in thousands)		
United States	\$ (33,034)	\$ 6,272	\$ 19,907
China	(4)	44,563	17,518
Turkey	31,955	56	(7,896)
Mexico	3,329	3,641	1,169
Total income before income taxes	\$ 2,246	\$ 54,532	\$ 30,698

2017 Tax Reform

During the fourth quarter of 2017, we recorded a net tax expense of \$0.1 million (net of valuation allowance) related to the enactment of the Tax Cuts and Jobs Act (Tax Reform). The expense was primarily related to applying the federal income tax rate change to certain of our deferred tax liabilities, and the realization of a benefit from our alternative minimum tax credit carryover. This provisional amount was subject to adjustment during the measurement period of up to one year following the December 2017 enactment of Tax Reform, as provided by SEC guidance.

As of December 31, 2018, we completed the accounting for the enactment-date income tax effects of Tax Reform, which resulted in an immaterial impact to our financial statements. Upon further analyses of certain aspects of Tax Reform, and refinement of calculations during 2018, we increased our provisional amount of previously untaxed foreign earnings by \$13.8 million, to \$88.1 million. This resulted in no change to our U.S. federal income tax expense due to the impact of foreign tax credits. In addition, the provisional net tax expense discussed above was unchanged.

Tax Reform enacted a new minimum tax on U.S. companies' foreign operations called Global Intangible Low Tax Income (GILTI). Beginning in 2018, GILTI provisions will be applied providing an incremental tax on low

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taxed foreign income. The GILTI provisions require us to include in our U.S. income tax return foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary's tangible assets. We have made a policy election to account for any ongoing impacts of GILTI tax in the period in which it is incurred. At December 31, 2018, we provided no net amount for the federal income tax impacts of GILTI, made up of \$12.1 million in income taxes related to the GILTI inclusion, which were fully offset by net operating loss carryforwards, and the income tax expense increase in the rate reconciliation related to the GILTI inclusion was reduced by the release of the previously provided valuation allowance on U.S. deferred tax assets.

Undistributed earnings of certain of our foreign subsidiaries amounted to approximately \$111.1 million at December 31, 2018, and we consider those earnings reinvested indefinitely. As a result of the deemed mandatory repatriation provision pursuant to Tax Reform, we included undistributed earnings in income subject to U.S. tax at reduced tax rates in 2017. In addition, we recognized GILTI income reduced by net operating losses in 2018 as part of the changes from Tax Reform. As a result, we do not have material basis differences related to cumulative unremitted earnings for U.S. income tax purposes.

The income tax provision includes U.S. federal, state, and local taxes, Turkey, China and Mexico taxes currently payable and those deferred because of temporary differences between the financial statement and the tax bases of assets and liabilities. The components of the income tax provision for the years ended December 31 are as follows:

	<u>2018</u>	<u>2017</u>	<u>2016</u>
	(in thousands)		
Current:			
U.S. federal	\$ —	\$ (49)	\$ —
U.S. state and local taxes	4	(3)	(196)
Foreign	11,875	14,200	9,973
Total current	<u>11,879</u>	<u>14,148</u>	<u>9,777</u>
Deferred:			
U.S. federal	(7,596)	(20)	51
U.S. state and local taxes	(36)	—	—
Foreign	(7,280)	1,670	(6,174)
Total deferred	<u>(14,912)</u>	<u>1,650</u>	<u>(6,123)</u>
Total income tax provision (benefit)	<u>\$ (3,033)</u>	<u>\$ 15,798</u>	<u>\$ 3,654</u>

TPI COMPOSITES, INC. AND SUBSIDIARIES

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The following is a reconciliation from the U.S. statutory income tax rate to our effective income tax rate for the years ended December 31:

	2018	2017	2016
United States statutory income tax rate	21.0%	35.0%	34.0%
Foreign rate differential	(14.4)	(7.2)	4.4
Foreign permanent differences	31.7	1.2	1.6
China rate change	—	—	(2.6)
U.S. rate change	—	10.3	—
Withholding taxes	27.3	5.2	4.6
Foreign tax credits	—	(5.2)	(5.4)
Subpart F / GILTI income	539.8	—	1.3
IRC Section 965 dividend	—	21.1	—
Foreign tax credits - 965 dividend	—	(13.7)	—
Share-based compensation	(89.0)	—	—
Nondeductible interest	—	—	7.8
Valuation allowance	(483.1)	(16.6)	(27.7)
State taxes	(1.7)	—	(0.4)
Deferred tax adjustments	4.6	3.8	(5.4)
Research and development	(59.8)	(1.2)	(2.0)
Turkey incentive credits	—	(5.5)	—
Foreign currency / inflationary adjustments	(90.6)	—	—
Other	(20.8)	1.8	1.7
Effective income tax rate	<u>(135.0)%</u>	<u>29.0%</u>	<u>11.9%</u>

The following is a summary of the components of deferred tax assets and liabilities at December 31:

	2018	2017	2016
	(in thousands)		
Deferred tax assets:			
Net operating loss and credit carry forwards	\$ 17,360	\$ 18,913	\$ 25,354
Deferred revenue	149	178	4,075
Non-deductible accruals	10,850	9,860	8,651
Equity compensation	3,607	3,489	3,503
Equity investment	—	390	633
Amortization of intangible assets	—	320	472
Non-deductible interest	1,452	—	—
Tax credits	2,212	4,760	2,914
Other	4,548	3,424	1,248
Total deferred tax assets	40,178	41,334	46,850
Valuation allowance	(8,520)	(18,680)	(23,618)
Net deferred tax assets	<u>31,658</u>	<u>22,654</u>	<u>23,232</u>
Deferred tax liabilities:			
Deferred revenue	(13,781)	(15,564)	(18,859)
Depreciation	(2,636)	(3,489)	(1,714)
Other	(406)	(1,972)	(423)
Total deferred tax liabilities	<u>(16,823)</u>	<u>(21,025)</u>	<u>(20,996)</u>
Net deferred tax assets	<u>\$ 14,835</u>	<u>\$ 1,629</u>	<u>\$ 2,236</u>

TPI COMPOSITES, INC. AND SUBSIDIARIES

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The deferred tax valuation allowance at December 31 consisted of the following:

	2018	2017	2016
	(in thousands)		
Allowance at beginning of year	\$ (18,680)	\$ (23,618)	\$ (31,100)
Benefits obtained	10,160	4,938	7,482
Allowance at end of year	\$ (8,520)	\$ (18,680)	\$ (23,618)

The valuation allowance as of December 31, 2018 primarily relates to certain state net operating losses (NOLs) that we believe do not meet the more-likely-than-not criteria for recording the related benefits.

During 2018, we released the valuation allowance recorded against deferred tax assets reported in the United States. The release of this valuation allowance resulted in the recognition of a non-cash tax benefit of \$10.8 million for the year. Additionally, during 2018, there was an increase in the valuation allowance of \$0.6 million primarily related to state NOLs.

We have U.S. federal NOL of approximately \$25.8 million, state NOLs of approximately \$118.5 million, foreign NOLs of approximately \$14.6 million and foreign tax credits of approximately \$1.9 million available to offset future U.S. and China taxable income. The U.S. federal and state net operating loss carryforwards expire in varying amounts through 2038 and the foreign tax credits expire in 2026. We also have Turkey investment tax incentives of approximately \$0.3 million which do not expire and foreign NOLs that expire in 2023.

Sections 382 and 383 of the Internal Revenue Code of 1986, contain rules that limit the ability of a company that undergoes an “ownership change” to utilize its net operating loss and tax credit carry forwards and certain built-in losses recognized in years after the “ownership change.” An “ownership change” is generally defined as any change in ownership of more than 50% of a corporation’s stock over a rolling three-year period by stockholders that own (directly or indirectly) 5% or more of the stock of a corporation, or arising from a new issuance of stock by a corporation. If an ownership change occurs, Section 382 generally imposes an annual limitation on the use of pre-ownership change NOLs to offset taxable income earned after the ownership change. The annual limitation is equal to the product of the applicable long-term tax exempt rate and the value of our stock immediately before the ownership change. This annual limitation may be adjusted to reflect any unused annual limitation for prior years and certain recognized built-in gains and losses for the year. In addition, Section 383 generally limits the amount of tax liability in any post-ownership change year that can be reduced by pre-ownership change tax credit carryforwards.

In June of 2018, we experienced an ownership change. The pre-ownership change NOLs existing at the date of change of \$47.7 million are subject to an annual limitation. 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 change. Certain of these NOLs may be at risk of limitation in the event of a future ownership change.

We recognize the impact of a tax position in its financial statements if that position is more-likely-than-not to be sustained on audit, based on the technical merits of the position. We disclose all unrecognized tax benefits, which includes the reserves recorded for uncertain tax positions on filed tax returns and the unrecognized portion of affirmative claims. Our policy regarding uncertain tax positions is to recognize potential accrued interest and penalties related to unrecognized tax benefits as a component of income tax expense. As of December 31, 2018, we had not identified any unrecognized tax benefits.

We operate in and file income tax returns in various jurisdictions in China, Mexico, Turkey, the U.S., Denmark and Switzerland, which are subject to examination by tax authorities.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Note 16. Concentration of Customers

Revenues from certain customers (in thousands) in excess of 10 percent of total consolidated Company revenues for the years ended December 31 are as follows:

Customer	2018		2017		2016	
	Revenues	% of Total	Revenues	% of Total	Revenues	% of Total
Customer 1 - Vestas	\$ 329,472	32.0%	\$266,276	27.9%	\$170,764	22.2%
Customer 2 - GE	325,962	31.7%	426,133	44.6%	372,294	48.4%
Customer 3 - Nordex	195,156	19.0%	153,227	16.0%	138,228	18.0%
Customer 4 - Siemens Gamesa	115,779	11.2%	92,394	9.7%	78,324	10.2%
Other	63,255	6.1%	17,168	1.8%	9,409	1.2%
Total	<u>\$1,029,624</u>	<u>100.0%</u>	<u>\$955,198</u>	<u>100.0%</u>	<u>\$769,019</u>	<u>100.0%</u>

Trade accounts receivable from certain customers in excess of 10 percent of total consolidated Company trade accounts receivable at December 31 are as follows:

Customer	2018	2017
	% of Total	% of Total
Customer 1 - Vestas	46.7%	52.4%
Customer 2 - GE	5.0%	18.9%
Customer 3 - Nordex	25.7%	19.5%

Note 17. Segment Reporting

FASB ASC Topic 280, *Segment Reporting*, establishes standards for the manner in which companies report financial information about operating segments, products, services, geographic areas and major customers. In managing our business, management focuses on growing our revenues and earnings in select geographic areas serving primarily the wind energy market. We have operations in the United States, China, Turkey and Mexico. Our operating segments are defined geographically as the United States, Asia, EMEAI and Mexico. Financial results are aggregated into four reportable segments based on quantitative thresholds. All of our segments operate in their local currency except for the Mexico and Asia segments, which both include a U.S. parent company.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

The following tables set forth certain information regarding each of our segments for the years ended December 31:

	<u>2018</u>	<u>2017</u>	<u>2016</u>
	(in thousands)		
Net sales by segment:			
U.S.	\$ 163,716	\$ 191,025	\$ 191,863
Asia	306,255	372,520	309,561
Mexico	268,756	206,563	128,020
EMEI	290,897	185,090	139,575
Total net sales	<u>\$1,029,624</u>	<u>\$ 955,198</u>	<u>\$ 769,019</u>
Net sales by geographic location ⁽¹⁾ :			
United States	\$ 163,716	\$ 191,025	\$ 191,863
China	306,255	372,520	309,561
Mexico	268,756	206,563	128,020
Turkey	290,897	185,090	139,575
Total net sales	<u>\$1,029,624</u>	<u>\$ 955,198</u>	<u>\$ 769,019</u>
Depreciation and amortization:			
U.S.	\$ 6,795	\$ 4,822	\$ 3,335
Asia	6,765	6,272	4,690
Mexico	7,891	5,994	2,462
EMEI	4,978	4,610	2,699
Total depreciation and amortization	<u>\$ 26,429</u>	<u>\$ 21,698</u>	<u>\$ 13,186</u>
Capital expenditures			
U.S.	\$ 21,305	\$ 10,575	\$ 4,056
Asia	11,218	7,000	3,287
Mexico	18,928	20,033	5,565
EMEI	1,237	7,220	17,599
Total capital expenditures	<u>\$ 52,688</u>	<u>\$ 44,828</u>	<u>\$ 30,507</u>
Income (loss) from operations:			
U.S.	\$ (67,357)	\$ (33,231)	\$ (19,154)
Asia	28,147	76,332	67,127
Mexico	12,154	14,430	10,060
EMEI	51,774	12,567	(5,059)
Total income from operations	<u>\$ 24,718</u>	<u>\$ 70,098</u>	<u>\$ 52,974</u>
Tangible long-lived assets:			
U.S.	\$ 34,825	\$ 24,575	
Asia (China)	31,924	28,887	
Mexico	65,981	39,756	
EMEI (Turkey and India)	26,693	30,262	
Total tangible long-lived assets	<u>\$ 159,423</u>	<u>\$ 123,480</u>	
Total assets:			
U.S.	\$ 115,435	\$ 157,208	
Asia	194,088	186,842	
Mexico	142,412	89,754	
EMEI	152,920	111,933	
Total assets	<u>\$ 604,855</u>	<u>\$ 545,737</u>	

(1) Net sales are attributable to countries based on the location where the product is manufactured or the services are performed.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Note 18. Selected Quarterly Financial Data (Unaudited)

The following tables set forth certain unaudited financial information for each quarter of 2018 and 2017. The unaudited quarterly information includes all normal recurring adjustments that, in the opinion of management, are necessary for the fair presentation of the information for the periods presented. The operating results for any quarter are not necessarily indicative of the results for any future period. The unaudited quarterly results are as follows:

	2018			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(in thousands, except per share data)			
Net sales	\$ 253,981	\$ 230,610	\$ 254,976	\$ 290,057
Gross profit	28,258	15,051	16,967	12,565
Net income (loss)	8,648	(4,053)	9,532	(8,848)
Net income (loss) per common share:				
Basic ⁽¹⁾	\$ 0.25	\$ (0.12)	\$ 0.28	\$ (0.26)
Diluted ⁽¹⁾	\$ 0.24	\$ (0.12)	\$ 0.26	\$ (0.26)

	2017			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(in thousands, except per share data)			
Net sales	\$ 208,615	\$ 239,582	\$ 253,498	\$ 253,503
Gross profit	19,918	29,925	30,306	30,322
Net income	5,213	9,577	21,737	2,207
Net income per common share:				
Basic ⁽¹⁾	\$ 0.15	\$ 0.28	\$ 0.64	\$ 0.06
Diluted ⁽¹⁾	\$ 0.15	\$ 0.28	\$ 0.62	\$ 0.06

- (1) The sum of the quarterly net income (loss) per common share amounts may not equal the annual net income (loss) per common share amount due to rounding.

Note 19. Adjustments to Previously Reported Financial Statements from the Adoption of an Accounting Pronouncement

As discussed in Note 1, *Summary of Operations and Significant Accounting Policies*, Topic 606 and ASUs 2016-15 and 2016-18 were adopted by us as of January 1, 2018 with retrospective application to January 1, 2016 through December 31, 2017. The December 31, 2017 balance sheet retrospectively restated for the adoption of Topic 606 presented below differs from that previously disclosed in the 2018 Quarterly Reports on Form 10-Q due to the correction of the income tax effect of the adoption of Topic 606. The effect of these changes are decreases in total assets, total liabilities and total stockholders' equity at December 31, 2017 of \$10.8 million, \$1.5 million and \$9.3 million, respectively.

The following tables summarize the effects of adopting Topic 606 and ASU 2016-18 had on our previously reported financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

**Consolidated Balance Sheet
(In thousands, except par value data)**

	December 31, 2017		
	As Reported	Adoption of Topic 606	As Adjusted
Assets			
Current assets:			
Cash and cash equivalents	\$ 148,113	\$ —	\$ 148,113
Restricted cash	3,849	—	3,849
Accounts receivable	121,576	—	121,576
Contract assets	—	105,619	105,619
Inventories	67,064	(62,952)	4,112
Inventories held for customer orders	64,858	(64,858)	—
Prepaid expenses and other current assets	27,507	—	27,507
Total current assets	432,967	(22,191)	410,776
Property, plant, and equipment, net	123,480	—	123,480
Goodwill	2,807	—	2,807
Intangible assets and deferred costs, net	150	958	1,108
Other noncurrent assets	14,130	(6,564)	7,566
Total assets	<u>\$ 573,534</u>	<u>\$ (27,797)</u>	<u>\$ 545,737</u>
Liabilities and Stockholders' Equity			
Current liabilities:			
Accounts payable and accrued expenses	\$ 166,743	\$ —	\$ 166,743
Accrued warranty	29,163	1,256	30,419
Deferred revenue	81,048	(81,048)	—
Customer deposits and customer advances	10,134	(9,702)	432
Contract liabilities	—	2,763	2,763
Current maturities of long-term debt	35,506	—	35,506
Total current liabilities	322,594	(86,731)	235,863
Long-term debt, net of debt issuance costs, discount and current maturities	85,879	—	85,879
Other noncurrent liabilities	4,444	(1,003)	3,441
Total liabilities	412,917	(87,734)	325,183
Commitments and contingencies			
Stockholders' equity:			
Common shares, \$0.01 par value, 100,000 shares authorized and 34,049 shares issued and 34,021 shares outstanding	340	—	340
Paid-in capital	301,543	—	301,543
Accumulated other comprehensive loss	(558)	—	(558)
Accumulated deficit	(140,197)	59,937	(80,260)
Treasury stock, at cost, 28 shares	(511)	—	(511)
Total stockholders' equity	160,617	59,937	220,554
Total liabilities and stockholders' equity	<u>\$ 573,534</u>	<u>\$ (27,797)</u>	<u>\$ 545,737</u>

The primary effects of the adoption of Topic 606 on our consolidated balance sheet include 1) amounts being recognized as revenue for work performed as production takes place over time as contract assets, which differs from the prior practice of including the balances in inventory; 2) no longer reporting inventory held for customer orders or deferred revenue since revenue is now being recognized over the course of the production process, and before the product is delivered to the customer; 3) that contract liabilities are reported for amounts collected from customers in advance of the production of products, similar to our prior practice of recording customer deposits; 4) the impact of the retrospective adjustment on deferred income taxes; and 5) the cumulative amount of the effect to prior periods' net income related to the adoption of Topic 606 through December 31, 2017 is reflected in retained earnings.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

**Consolidated Income Statement
(In thousands, except per share data)**

	Year Ended December 31, 2017		
	As Reported	Adoption of Topic 606	As Adjusted
Net sales	\$ 930,281	\$ 24,917	\$ 955,198
Cost of sales	776,944	27,155	804,099
Startup and transition costs	40,628	—	40,628
Total cost of goods sold	817,572	27,155	844,727
Gross profit	112,709	(2,238)	110,471
General and administrative expenses	40,373	—	40,373
Income from operations	72,336	(2,238)	70,098
Other income (expense):			
Interest income	95	—	95
Interest expense	(12,381)	—	(12,381)
Realized loss on foreign currency remeasurement	(4,471)	—	(4,471)
Miscellaneous income	1,191	—	1,191
Total other expense	(15,566)	—	(15,566)
Income before income taxes	56,770	(2,238)	54,532
Income tax provision	(13,080)	(2,718)	(15,798)
Net income	\$ 43,690	\$ (4,956)	\$ 38,734
Weighted-average common shares outstanding:			
Basic	33,844	33,844	33,844
Diluted	34,862	34,862	34,862
Net income per common share:			
Basic	\$ 1.29	\$ (0.15)	\$ 1.14
Diluted	\$ 1.25	\$ (0.14)	\$ 1.11

The primary effects of the adoption of Topic 606 on our consolidated income statement relate to amounts being recognized as revenue for work performed as production takes place over time, which differs from the prior practice of recognizing revenue when the product was delivered to the customer.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Consolidated Income Statement
(In thousands, except per share data)

	Year Ended December 31, 2016		
	As Reported	Adoption of Topic 606	As Adjusted
Net sales	\$ 754,877	\$ 14,142	\$ 769,019
Cost of sales	659,745	4,281	664,026
Startup and transition costs	18,127	—	18,127
Total cost of goods sold	677,872	4,281	682,153
Gross profit	77,005	9,861	86,866
General and administrative expenses	33,892	—	33,892
Income from operations	43,113	9,861	52,974
Other income (expense):			
Interest income	344	—	344
Interest expense	(17,614)	—	(17,614)
Loss on extinguishment of debt	(4,487)	—	(4,487)
Realized loss on foreign currency remeasurement	(757)	—	(757)
Miscellaneous income	238	—	238
Total other expense	(22,276)	—	(22,276)
Income before income taxes	20,837	9,861	30,698
Income tax provision	(6,995)	3,341	(3,654)
Net income	13,842	13,202	27,044
Net income attributable to preferred stockholders	5,471	—	5,471
Net income attributable to common stockholders	\$ 8,371	\$ 13,202	\$ 21,573
Weighted-average common shares outstanding:			
Basic	17,530	17,530	17,530
Diluted	17,616	17,616	17,616
Net income per common share:			
Basic	\$ 0.48	\$ 0.75	\$ 1.23
Diluted	\$ 0.48	\$ 0.74	\$ 1.22

The primary effects of the adoption of Topic 606 on our consolidated income statement relate to amounts being recognized as revenue for work performed as production takes place over time, which differs from the prior practice of recognizing revenue when the product was delivered to the customer.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

**Consolidated Statement of Comprehensive Income
(In thousands)**

	Year Ended December 31, 2017		
	As Reported	Adoption of Topic 606	As Adjusted
Net income	\$ 43,690	\$ (4,956)	\$ 38,734
Other comprehensive income:			
Foreign currency translation adjustments	3,304	—	3,304
Comprehensive income	\$ 46,994	\$ (4,956)	\$ 42,038
	Year Ended December 31, 2016		
	As Reported	Adoption of Topic 606	As Adjusted
Net income	\$ 13,842	\$ 13,202	\$ 27,044
Other comprehensive loss:			
Foreign currency translation adjustments	(3,837)	—	(3,837)
Comprehensive income	\$ 10,005	\$ 13,202	\$ 23,207

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

**Consolidated Statements of Changes in Stockholders' Equity
(In thousands)**

	Common		Paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Treasury stock, at cost	Total stockholders' equity (deficit)
	Shares	Amount					
Balance at December 31, 2015 - as reported	4,238	\$ —	\$ —	(25)	\$ (191,172)	\$ —	\$ (191,197)
Cumulative-effect adjustment of the adoption of Topic 606 on January 1, 2016	—	—	—	—	51,691	—	51,691
Balance at December 31, 2015 - as adjusted	4,238	—	—	(25)	(139,481)	—	(139,506)
Year ended December 31, 2016 activity - as reported	29,499	337	292,833	(3,837)	8,371	—	297,704
Effect of the adoption of Topic 606	—	—	—	—	13,202	—	13,202
Balance at December 31, 2016 - as adjusted	33,737	337	292,833	(3,862)	(117,908)	—	171,400
Year ended December 31, 2017 activity - as reported	312	3	8,710	3,304	42,604	(511)	54,110
Effect of the adoption of Topic 606	—	—	—	—	(4,956)	—	(4,956)
Balance at December 31, 2017 - as adjusted	<u>34,049</u>	<u>\$ 340</u>	<u>\$301,543</u>	<u>\$ (558)</u>	<u>\$ (80,260)</u>	<u>\$ (511)</u>	<u>\$ 220,554</u>

The adoption of Topic 606 increased our total stockholders' equity in 2015 by \$51.7 million.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

**Consolidated Statement of Cash Flows
(In thousands)**

	Year Ended December 31, 2017			
	As Reported	Adoption of Topic 606	Adoption of ASU 2016-18	As Adjusted
Cash flows from operating activities:				
Net income	\$ 43,690	\$ (4,956)	\$ —	\$ 38,734
Adjustments to reconcile net income to net cash provided by operating activities:				
Depreciation and amortization	20,878	820	—	21,698
Share-based compensation expense	7,124	—	—	7,124
Amortization of debt issuance costs	573	—	—	573
Loss on disposal of property and equipment	334	—	—	334
Deferred income taxes	(1,068)	2,718	—	1,650
Changes in assets and liabilities:				
Accounts receivable	(53,734)	(493)	—	(54,227)
Contract assets and liabilities	—	(4,423)	—	(4,423)
Inventories	(26,519)	27,483	—	964
Prepaid expenses and other current assets	3,150	—	—	3,150
Other noncurrent assets	7,487	3,392	(8,063)	2,816
Accounts payable and accrued expenses	51,248	—	—	51,248
Accrued warranty	9,251	79	—	9,330
Customer deposits	8,744	(8,518)	—	226
Deferred revenue	11,480	(11,480)	—	—
Other noncurrent liabilities	25	(4,622)	—	(4,597)
Net cash provided by operating activities	82,663	—	(8,063)	74,600
Cash flows from investing activities:				
Purchases of property and equipment	(44,828)	—	—	(44,828)
Proceeds from sale of assets	850	—	—	850
Net cash used in investing activities	(43,978)	—	—	(43,978)
Cash flows from financing activities:				
Repayments of term loans	(3,750)	—	—	(3,750)
Net repayments of accounts receivable financing	(1,020)	—	—	(1,020)
Proceeds from working capital loans	9,936	—	—	9,936
Repayments of working capital loans	(14,574)	—	—	(14,574)
Net proceeds from other debt	1,313	—	—	1,313
Debt issuance costs	(454)	—	—	(454)
Proceeds from exercise of stock options	1,430	—	—	1,430
Repurchase of common stock including shares withheld in lieu of income taxes	(1,264)	—	—	(1,264)
Restricted cash	(1,590)	—	1,590	—
Net cash used in financing activities	(9,973)	—	1,590	(8,383)
Impact of foreign exchange rates on cash, cash equivalents and restricted cash				
	335	—	—	335
Net change in cash, cash equivalents and restricted cash	29,047	—	(6,473)	22,574
Cash, cash equivalents and restricted cash, beginning of year	119,066	—	10,797	129,863
Cash, cash equivalents and restricted cash, end of year	\$ 148,113	\$ —	\$ 4,324	\$ 152,437

The primary effects of the adoption of Topic 606 on our consolidated statement of cash flows include 1) the establishment of contract assets and liabilities; 2) the reduction of inventory and elimination of inventory held for customer orders; 3) the impact of the retrospective adjustment on deferred income taxes; and 4) the elimination of deferred revenue. For more details on these items, see the disclosure related to the effect of the adoption of Topic 606 on our consolidated balance sheet.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

**Consolidated Statement of Cash Flows
(In thousands)**

	Year Ended December 31, 2016			
	As Reported	Adoption of Topic 606	Adoption of ASU 2016-18	As Adjusted
Cash flows from operating activities:				
Net income	\$ 13,842	\$ 13,202	\$ —	\$ 27,044
Adjustments to reconcile net income to net cash provided by operating activities:				
Depreciation and amortization	12,897	289	—	13,186
Share-based compensation expense	9,902	—	—	9,902
Amortization of debt issuance costs and debt discount	4,681	—	—	4,681
Loss on extinguishment of debt	4,487	—	—	4,487
Loss on disposal of property and equipment	2	—	—	2
Deferred income taxes	(2,782)	(3,341)	—	(6,123)
Changes in assets and liabilities:				
Accounts receivable	5,071	493	—	5,564
Contract assets and liabilities	—	(17,227)	—	(17,227)
Inventories	(4,967)	3,788	—	(1,179)
Prepaid expenses and other current assets	681	—	—	681
Other noncurrent assets	(8,291)	(1,400)	6,001	(3,690)
Accounts payable and accrued expenses	14,959	3,341	—	18,300
Accrued warranty	6,316	393	—	6,709
Customer deposits	(7,515)	6,639	—	(876)
Deferred revenue	4,048	(4,048)	—	—
Other noncurrent liabilities	510	(2,129)	—	(1,619)
Net cash provided by operating activities	53,841	—	6,001	59,842
Cash flows from investing activities:				
Purchases of property and equipment	(30,507)	—	—	(30,507)
Net cash used in investing activities	(30,507)	—	—	(30,507)
Cash flows from financing activities:				
Proceeds from issuance of common stock sold in initial public offering, net of underwriters discount and offering costs	67,199	—	—	67,199
Repayments of term loans	(930)	—	—	(930)
Net repayments of accounts receivable financing	(5,385)	—	—	(5,385)
Proceeds from working capital loans	15,813	—	—	15,813
Repayments of working capital loans	(20,103)	—	—	(20,103)
Net repayments of other debt	(4,765)	—	—	(4,765)
Proceeds from customer advances	2,000	—	—	2,000
Repayments of customer advances	(2,000)	—	—	(2,000)
Restricted cash	(499)	—	499	—
Net cash provided by financing activities	51,330	—	499	51,829
Impact of foreign exchange rates on cash, cash equivalents and restricted cash				
	(1,515)	—	—	(1,515)
Net change in cash, cash equivalents and restricted cash	73,149	—	6,500	79,649
Cash, cash equivalents and restricted cash, beginning of year	45,917	—	4,297	50,214
Cash, cash equivalents and restricted cash, end of year	<u>\$ 119,066</u>	<u>\$ —</u>	<u>\$ 10,797</u>	<u>\$ 129,863</u>

The primary effects of the adoption of Topic 606 on our consolidated statement of cash flows include 1) the establishment of contract assets and liabilities; 2) the reduction of inventory and elimination of inventory held for customer orders; 3) the impact of the retrospective adjustment on deferred income taxes; and 4) the elimination of deferred revenue. For more details on these items, see the disclosure related to the effect of the adoption of Topic 606 on our consolidated balance sheet.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

As part of our adoption of Topic 606, we have elected to use the following practical expedients:

- for completed contracts that have variable consideration, we have used the transaction price at the date on which the contract was completed, rather than estimating amounts for variable consideration in each comparative reporting period.
- for modified contracts, we did not separately evaluate the effects of the contract modifications before the beginning of the earliest period presented. Instead, we reflected the aggregate effect of all of the modifications that occur before the beginning of the earliest period presented in determining the transaction price, identifying the satisfied and unsatisfied performance obligations, and allocating the transaction price to the performance obligations.
- for all periods presented before the date of initial application, we did not disclose the amount of the transaction price allocated to remaining performance obligations, nor an explanation of when we expect to recognize that amount as revenue.

The impact of applying the above practical expedients may change the period of revenue recognition but not the total amount to be recognized under the contract; therefore, we believe that the application of the practical expedients is not material to the comparability of the information presented above and the accounting and financial reporting related to the adoption of Topic 606.

Exhibit Index

Number	Description
3.1	Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect (incorporated by reference to Exhibit 3.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on July 11, 2016)
3.2	Second Amended and Restated By-laws of the Registrant, as currently in effect (incorporated by reference to Exhibit 3.4 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on July 11, 2016)
4.1	Specimen Stock Certificate (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on July 11, 2016)
4.2	Third Amended and Restated Investor Rights Agreement by and among the Registrant and the investors named therein, dated June 17, 2010, as amended (incorporated by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
4.3	Form of senior indenture, to be entered into between the Registrant and the trustee designated therein (incorporated by reference to Exhibit 4.3 to the Registrant's Registration Statement on Form S-3 (File No. 333-220307) filed on September 1, 2017)
4.4	Form of subordinated indenture, to be entered into between the Registrant and the trustee designated therein (incorporated by reference to Exhibit 4.5 to the Registrant's Registration Statement on Form S-3 (File No. 333-220307) filed on September 1, 2017)
10.1‡	2008 Stock Option and Grant Plan, as amended by Amendment No. 1, dated August 14, 2008 and Amendment No. 2, dated December 30, 2008, and forms of award agreements thereunder (incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.2‡	Amended and Restated 2015 Stock Option and Incentive Plan and forms of award agreements thereunder (incorporated by reference to Exhibit 10.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.3†	Amendment No. 5 to Financing Agreement dated as of August 19, 2014, entered into as of December 30, 2016, by and among the Registrant, certain of its domestic subsidiaries, HPS Investment Partners, LLC as Administrative Agent and Collateral Agent, Capital One, N.A., as Revolving Loan Representative and the lenders from time to time party thereto, as amended (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K/A (File No. 001-37839) filed on May 5, 2017)
10.4†	Amended and Restated Financing Agreement entered into as of December 30, 2016, by and among the Registrant, certain of its domestic subsidiaries, HPS Investment Partners, LLC as Administrative Agent and Collateral Agent, Capital One, N.A., as Revolving Loan Representative and the lenders from time to time party thereto (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K/A (File No. 001-37839) filed on April 20, 2017)
10.5†	Supply Agreement between General Electric International, Inc. and TPI Mexico III, LLC, entered into as of October 4, 2016 (incorporated by reference to Exhibit 10.3 of the Registrant's Current Report on Form 8-K/A (File No. 001-37839) filed on April 20, 2017)
10.6†	Amended and Restated Supply Agreement between General Electric International, Inc. and TPI Iowa, LLC, entered into as of October 4, 2016 (incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K/A (File No. 001-37839) filed on April 20, 2017)
10.7†	Supply Agreement between General Electric International, Inc. and TPI Mexico, LLC, entered into as of October 18, 2013, as amended (incorporated by reference to Exhibit 10.10 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)

Number	Description
10.8†	First Amendment to Supply Agreement between General Electric International, Inc. and TPI Mexico, LLC, entered into as of October 4, 2016 (incorporated by reference to Exhibit 10.2 of the Registrant's Current Report on Form 8-K/A (File No. 001-37839) filed on April 20, 2017)
10.9	Lease between TPI Iowa, LLC and Opus Northwest L.L.C., dated November 13, 2007, as amended (incorporated by reference to Exhibit 10.11 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.10	Commencement Date Memorandum between TPI Iowa LLC and Opus Northwest, L.L.C., entered into as of July 25, 2008 (incorporated by reference to Exhibit 10.12 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.11	Lease between TPI Kompozit Kanat Sanayi ve Ticaret A.S. and Med Union Containers A.S., dated March 16, 2012 (incorporated by reference to Exhibit 10.13 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.12	Lease between TPI Wind Blade Dafeng Company Limited and Jiangsu Erhuajie Energy Equipment Co., Ltd, dated November 27, 2013, as amended (incorporated by reference to Exhibit 10.14 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.13	Lease between the Registrant (f/k/a LCSH Holding, Inc.) and Gainey Center II LLC, dated June 12, 2007, as amended (incorporated by reference to Exhibit 10.15 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.14	Lease between TPI, Inc. (f/k/a TPI Composites, Inc.) and Borden & Remington Fall River LLC, dated as of December 1, 2008, as superseded by Standard Industrial Lease between TPI, Inc. and Borden & Remington Fall River LLC, dated June 28, 2010, as amended (incorporated by reference to Exhibit 10.16 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.15	Lease between Composite Solutions, Inc. and TN Realty, LLC, dated September 30, 2004, as amended (incorporated by reference to Exhibit 10.17 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.16	Lease between TPI-Composites S. de R.L. de C.V. and Deutsche Bank México, S.A. Institución de Banca Múltiple, Division Fiduciaria, as Trustee of Trust F/1638, dated April 15, 2013, as amended (incorporated by reference to Exhibit 10.18 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.17*	Amendment Agreement, among Macquarie Mexico Real Estate Management S.A. de C.V., TPI-Composites, S. de R.L. de C.V. and TPI Composites, Inc., dated November 27, 2018
10.18	Lease between TPI-Composites S. de R.L. de C.V. and The Bank of New York Mellon, S.A., as Trustee in the Trust F/00335, dated September 25, 2013 (incorporated by reference to Exhibit 10.19 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.19	Lease between TPI Mexico, LLC and Trailer Transfer, Inc., dated October 16, 2013 (incorporated by reference to Exhibit 10.20 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.20	Lease between TPI Mexico, LLC and Lanestone 1, LLC, dated April 14, 2014 (incorporated by reference to Exhibit 10.21 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.21	Plant and Equipment Lease between TPI Composites (Taicang) Co., Ltd. and Suzhou Tianneng Power Wind Mold Co., Ltd, dated May 1, 2014 (incorporated by reference to Exhibit 10.22 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)

Number	Description
10.22‡	Form of Employment Agreement between the Registrant and each of its executive officers (incorporated by reference to Exhibit 10.23 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.23	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.24 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.24	Contract between TPI Composites (Taicang) Co. Ltd. and Mr. Jun Ji, dated August 4, 2015 (incorporated by reference to Exhibit 10.25 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.25	Lease between TPI Composites, S. de R.L. de C.V. and Vesta Baja California, S. de R.L. de C.V., dated November 20, 2015 (incorporated by reference to Exhibit 10.26 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.26	Lease between TPI Turkey IZBAS, LLC and Dere Konstruksiyon Demir Celik Insaat Taahhut Muhendislik Musavirlik Sanayi ve Ticaret Anonim Sirketi, dated December 9, 2015 (incorporated by reference to Exhibit 10.27 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.27	Lease between TPI Composites (Taicang) Co., Ltd. and Suzhou Suchen Chemical & Plastics Co., Ltd., dated August 5, 2014 (incorporated by reference to Exhibit 10.28 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.28	Lease between TPI Wind Blade Dafeng Co., Ltd. and Jiangsu Jianhao Transmission Machinery Co., Ltd., commencing January 1, 2016 (incorporated by reference to Exhibit 10.29 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.29	Lease between TPI Kompozit Kanat San. ve Tic. A.S. and BORO Insaat Yatirim Sanayi ve Ticaret A.S., dated October 16, 2015 (incorporated by reference to Exhibit 10.30 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.30	Sublease between TPI Inc. and Nordex Energy GmbH, dated April 24, 2015 (incorporated by reference to Exhibit 10.31 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.31†	Settlement Agreement and Release between the Registrant and Nordex SE, dated June 3, 2016 (incorporated by reference to Exhibit 10.32 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
10.32	Senior Executive Cash Incentive Bonus Plan (incorporated by reference to Exhibit 10.34 to the Registrant’s Registration Statement on Form S-1 (File No. 333-212093) filed on July 11, 2016)
10.33	Lease between Phoenix Newton LLC and TPI Iowa II, LLC, dated January 5, 2018 (incorporated by reference to Exhibit 10.33 to the Registrant’s Annual Report on Form 10-K (File No. 001-37839) filed on March 8, 2018)
10.34	Master Lease Agreement Subject to Condition between TPI Composites II, S. de R.L. de C.V. and QVC II, S. de R.L. de C.V. dated May 25, 2017, as amended (incorporated by reference to Exhibit 10.34 to the Registrant’s Annual Report on Form 10-K (File No. 001-37839) filed on March 8, 2018)
10.35*	Amended and Restated Non-Employee Director Compensation Policy
10.36*	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

Number	Description
10.37	Credit Agreement entered into as of April 6, 2018, by and among the Registrant, JPMorgan Chase Bank, N.A., as Administrative Agent, and Well Fargo Bank, National Association and Capital One National Association, as Co-Syndication Agents, and the lenders from time to time party thereto (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37839) filed on May 3, 2018)
10.38	Form of Employee Restricted Stock Unit Award (Time-Based Vesting) under the Amended and Restated 2015 Stock Option And Incentive Plan (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37839) filed on May 3, 2018)
10.39	Form of Executive Restrictive Stock Unit Award (Time-Based Vesting) under the Amended and Restated 2015 Stock Option And Incentive Plan (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37839) filed on May 3, 2018)
10.40	Form of Employee Restricted Stock Unit Award (Adjusted EBITDA Performance-Based Vesting) under the Amended and Restated 2015 Stock Option And Incentive Plan (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37839) filed on May 3, 2018)
10.41	Form of Executive Restricted Stock Unit Award (Adjusted EBITDA Performance-Based Vesting) under the Amended and Restated 2015 Stock Option And Incentive Plan (incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37839) filed on May 3, 2018)
10.42	Form of Employee Restricted Stock Unit Award (Stock Price Performance-Based Vesting) under the Amended and Restated 2015 Stock Option And Incentive Plan (incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37839) filed on May 3, 2018)
10.43	Form of Executive Restricted Stock Unit Award (Stock Price Performance-Based Vesting) under the Amended and Restated 2015 Stock Option And Incentive Plan (incorporated by reference to Exhibit 10.7 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37839) filed on May 3, 2018)
21.1	List of Subsidiaries (incorporated by reference to Exhibit 21.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-212093) filed on June 17, 2016)
23.1*	Consent of KPMG LLP, Independent Registered Public Accounting Firm
24.1	Power of Attorney (incorporated by reference to the signature page of this Annual Report on Form 10-K)
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

Number	Description
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

** The certifications furnished in Exhibits 32.1 and 32.2 hereto are deemed to accompany this Annual Report on Form 10-K 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.

† Confidential treatment has been requested for certain provisions of this Exhibit pursuant to Rule 406 promulgated under the Securities Act of 1933.

‡ Indicates compensatory plan or arrangement

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.

TPI COMPOSITES, INC.

Date: March 4, 2019

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

We, the undersigned officers and directors of TPI Composites, Inc., hereby severally constitute and appoint Steven C. Lockard and William E. Siwek, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him or her and, place and stead, and in any and all capacities, to sign conformed for us and in our names in the capacities indicated below any and all signatures and amendments to this report, and to file the same, with all exhibits thereto, filing date and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Report has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

<u>Name</u>	<u>Title</u>	<u>Date</u>
/s/ Steven C. Lockard Steven C. Lockard	President, Chief Executive Officer and Director (Principal Executive Officer)	March 4, 2019
/s/ William E. Siwek William E. Siwek	Chief Financial Officer (Principal Financial and Accounting Officer)	March 4, 2019
/s/ Stephen B. Bransfield Stephen B. Bransfield	Director	March 4, 2019
/s/ Michael L. DeRosa Michael L. DeRosa	Director	March 4, 2019
/s/ Jayshree S. Desai Jayshree S. Desai	Director	March 4, 2019
/s/ Philip J. Deutch Philip J. Deutch	Director	March 4, 2019
/s/ Paul G. Giovacchini Paul G. Giovacchini	Director and Chairman of the Board	March 4, 2019
/s/ Jack A. Henry Jack A. Henry	Director	March 4, 2019
/s/ James A. Hughes James A. Hughes	Director	March 4, 2019
/s/ Tyrone M. Jordan Tyrone M. Jordan	Director	March 4, 2019
/s/ Daniel G. Weiss Daniel G. Weiss	Director	March 4, 2019

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Corporate Information

Stock Exchange Listing

NASDAQ: TPIC

Corporate Headquarters

TPI Composites, Inc.
8501 N Scottsdale Road, Suite 100
Scottsdale, AZ 85253

(480) 305-8910

www.tpicomposites.com

Transfer Agent and Registrar

Please direct general questions about shareholder accounts, stock certificates, transfer of shares, or duplicate mailings to TPI Composites' transfer agent:

American Stock Transfer & Trust
Company, LLC

6201 15th Avenue
Brooklyn, NY 11219
(800) 937-5449

www.astfinancial.com

Legal Counsel

Goodwin Procter LLP

Independent Auditor

KPMG LLP

Annual Meeting

The annual meeting of stockholders will be held on:

May 14, 2019

12:00 pm PST

Hyatt Regency Scottsdale Resort & Spa
7500 E Doubletree Ranch Road
Scottsdale, AZ 85258

Investor Information

To receive additional copies of our Annual Report on Form 10-K as filed with the SEC or to obtain other TPI Composites information, please contact our investor relations department.

Investor Relations

Email: investors@tpicomposites.com
(480) 315-8742

Officer Certifications

Our Annual Report on Form 10-K filed with the SEC is included herein, excluding all exhibits. We filed as exhibits to our Annual Report on Form 10-K our CEO and CFO certifications under Sections 302 and 906 of the Sarbanes-Oxley Act.

Board of Directors

Steven C. Lockard
*President, Chief Executive Officer
and Director*

Paul G. Giovacchini ^(2*)
Chairman of the Board

Stephen B. Bransfield ^(2, 3)

Michael L. DeRosa ⁽²⁾

Jayshree S. Desai ⁽¹⁾

Philip J. Deutch ⁽³⁾

Jack A. Henry ^(1*)

James A. Hughes ⁽¹⁾

Tyrone M. Jordan

Daniel G. Weiss ^(3*)

1 Audit Committee

2 Compensation Committee

3 Nominating and Corporate
Governance Committee

*Committee Chair

Executive Management Team

Steven C. Lockard
*President, Chief Executive Officer and
Director*

Joseph G. Kishkill
Chief Commercial Officer

William E. Siwek
Chief Financial Officer

Steven G. Fishbach
General Counsel and Secretary

Thomas J. Castle
*Senior Vice President – U.S. and
Transportation Operations*

Ramesh Gopalakrishnan
*Senior Vice President – Global Quality,
Technology and LATAM Operations*

Geraldine E. Ilukowicz
*Senior Vice President – Global Human
Resources*

Joseph M. Kerkhove
Senior Vice President – Strategic Markets

Patrick D. Weir
Senior Vice President – China

Forward-Looking Statements

This report contains forward-looking statements within the meaning of the United States federal securities laws. These forward-looking statements do not constitute guarantees of future performance. These forward-looking statements are based on current information and expectations, are subject to uncertainties and changes in circumstances, and involve a number of factors that could cause actual results to differ materially from those anticipated by these forward-looking statements, including risks described in the company's most recent annual report on Form 10-K, and other filings with the Securities and Exchange Commission. TPI Composites assumes no obligation to update any forward-looking information contained in this report or with respect to the information described herein.





TPI Composites, Inc.

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Scottsdale, AZ 85253

(480) 305-8910

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