

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, 2020

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	Trading symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.01	TPIC	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 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	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

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 30, 2020 as reported by the NASDAQ Global Market on such date was approximately \$708 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 29, 2021, the Registrant had 36,563,798 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 18, 2021, 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:

- the potential impact of the COVID-19 pandemic on our business and results of operations;
- competition from other wind blade and wind blade turbine manufacturers;
- the discovery of defects in our products and our ability to estimate the future cost of warranty campaigns;
- 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;
- our ability to successfully expand in our existing wind energy markets and into new international wind energy markets, including our ability to expand our field service inspection and repair services business and manufacture wind blades for offshore wind energy projects;
- our ability to successfully open new manufacturing facilities and expand existing facilities on time and on budget;
- the impact of the accelerated pace of new product and wind blade model introductions on our business and our results of operations;
- our ability to successfully expand our transportation business and execute upon our strategy of entering new markets outside of wind energy;
- worldwide economic conditions and their impact on customer demand;
- our ability to maintain, protect and enhance our intellectual property;
- our ability to comply with existing, modified or new laws and regulations applying to our business, including the imposition of new taxes, duties or similar assessments on our products;
- the attraction and retention of qualified employees and key personnel;
- our ability to maintain good working relationships with our employees, and avoid labor disruptions, strikes and other disputes with labor unions that represent certain of our employees;
- our ability to procure adequate supplies of raw materials and components to fulfill our wind blade volume commitments to our customers; and

- the potential impact of one or more of our customers becoming bankrupt or insolvent, or experiencing other financial problems.

These forward-looking statements are only predictions. These statements relate to future events or our future financial performance and involve known and unknown risks, uncertainties and other important factors that may cause our actual results, levels of activity, performance or achievements to materially differ from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. We have described 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 LCS Holding, Inc. and then changed its corporate name to TPI Composites, Inc. in 2008.

Overview

We are the 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) 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 is 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 provide field service inspection and repair services to our OEM customers and wind farm owners and operators. Our field service inspection and repairs services include diagnostic, repair and maintenance service offerings for wind blades that have been installed on wind turbines located at wind farms. Our field service inspection and repair services can be performed up-tower, where a blade technician performs these services in the air or from the wind turbine tower on a wind turbine blade, or down tower, where a blade is first removed from a wind turbine and these services are performed on the ground at the wind farm site or in a repair facility.

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. In February 2018, we entered into an agreement with Navistar, Inc. (Navistar) to design and develop an all composite Class 8 tractor cab. This collaborative development project was entered into in connection with Navistar's award under the Department of Energy's (DOE) Super Truck II investment program, which is designed to promote fuel efficiency in commercial vehicles. In 2019, we also agreed to develop prototype composite body delivery vehicles for Workhorse Group. In 2019, we made a capital investment of approximately \$11.5 million to develop a highly automated manufacturing line for the electric vehicle market within our Warren, Rhode Island facility, and we are currently in the process of commissioning this line. We expect this investment will enable us to further develop our technology, create defensible product and process intellectual property (IP) and demonstrate our capability to manufacture composite components cost effectively at automotive volume rates. We also expect this automated manufacturing 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 96%, 96%, and 95% of our total net sales for each of the years ended December 31, 2020, 2019 and 2018, respectively. As of February 24, 2021, our long-term wind and transportation supply agreements provide for minimum aggregate volume commitments from our customers of approximately \$2.8 billion and encourage our

customers to purchase additional volume up to, in the aggregate, a total contract value of approximately \$4.6 billion through the end of 2024.

Financial Information about Segments and Geographic Areas

We divide our business operations into five geographic operating segments - (1) the United States (U.S.), (2) Asia, (3) Mexico, (4) Europe, the Middle East and Africa (EMEA) and (5) India as follows:

- Our U.S. segment includes (1) the manufacturing of wind blades at our Newton, Iowa facility, (2) the manufacturing of precision molding and assembly systems used for our transportation business at our Warren, Rhode Island facility, (3) the manufacturing of composite solutions for the transportation industry, which we also conduct at our Warren, Rhode Island facility, (4) wind blade inspection and repair services, (5) our advanced engineering center in Kolding, Denmark, which provides technical and engineering resources to our manufacturing facilities, (6) our engineering center in Berlin, Germany and (7) our corporate headquarters.
- Our Asia segment includes (1) the manufacturing of wind blades at our facilities in Dafeng, China and Yangzhou, China, (2) the manufacturing of precision molding and assembly systems at our Taicang Port, China facility and (3) wind blade inspection and repair services.
- Our Mexico segment includes (1) the manufacturing of wind blades at our three facilities in Juárez, Mexico and a facility in Matamoros, Mexico, (2) the manufacturing of precision molding and assembly systems and composite solutions for the transportation industry at our fourth Juárez, Mexico facility and (3) wind blade inspection and repair services.
- Our EMEA segment manufactures wind blades at our two facilities in Izmir, Turkey and also performs wind blade inspection and repair services.
- Our India segment manufactures wind blades at our new manufacturing facility in Chennai, India, which commenced operations in the first quarter of 2020.

For additional information regarding our operating segments and geographic areas, see Note 19 – 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:

- **Capitalize on the long-term, global trends of decarbonization of the electric sector and the electrification of vehicles.** We believe we are well-positioned to participate and benefit from the continued global growth of renewable energy, and in particular, wind energy. Global demand for renewable energy has increased significantly in recent years and we expect that this trend will continue and potentially accelerate in the coming years due to a multitude of factors, including: increased cost competitiveness of wind energy compared to fossil fuel generated electricity; increased demand from corporations and utility providers for renewable energy; recent international policy initiatives designed to promote the growth of renewable energy; and the Biden administration’s proposed plans to promote renewable energy growth in the United States. We believe our global footprint of manufacturing facilities will allow us to capitalize on the continued global growth of wind energy in the coming years.

Similarly, we believe we are well-positioned to capitalize on the projected growth of electric vehicles. As the global 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. We believe vehicle manufacturers and vehicle owners will also benefit from the lower cost of total ownership due to the durability and the non-corrosive properties of composites compared to metallic materials along with the ability to scale production with lower production investment costs. As a result, we expect there will be an increased 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.

- **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 BloombergNEF (Bloomberg), represented approximately 52% of the global onshore wind energy market, approximately 88% of that market excluding China, and 99% of the U.S. onshore wind turbine market over the three years ended December 31, 2019, 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 July 2020, General Electric International, Inc. and its affiliates (GE Wind) agreed to extend our existing supply agreement in one of our Mexico plants by two years to 2022, and our existing supply agreement in our Newton Iowa plant by one year through 2021 with an option to extend through 2022, and added one additional wind blade manufacturing line in Mexico to provide blades for GE Wind's turbine technologies in North America. In July 2020, we entered into a supply agreement with Nordex SE (Nordex) for two additional manufacturing lines in our Chennai, India facility, where we plan to start production in the first quarter of 2021. In August 2020, we reached an agreement with Vestas to extend our supply agreement at one of our Izmir, Turkey plants by one year through 2022.
- **Leverage our footprint in large and growing wind markets, capitalize on the continuing outsourcing trend, evaluate building wind blades for the growing offshore wind 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 with 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 onshore wind markets. We also are evaluating opportunities to manufacture wind blades for the growing offshore wind market. In addition, our demonstrated ability to enter 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, new line and factory start up 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 field service inspection and repair business.** Although sales from our field service inspection and repair business currently represent a very small percentage of our total revenue, we plan to expand our field service inspection and repair business by leveraging our existing wind blade manufacturing and composites expertise and global footprint. We believe there is an increasing demand and growing market for experienced wind blade inspection and repair services worldwide as the number of wind turbines installed worldwide continues to grow and the fleet of existing wind turbines continues to age. We also expect that the operating margins at our field service inspection and repair business will be higher than the operating margins of our wind blade manufacturing business.

- ***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 as well as high speed, high volume manufacturing of structural composite components, particularly in the transportation market.

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 65,000 wind blades since 2001 with a strong, long-term 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 approximately 80 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. Using continuous improvement principles, we can customize each manufacturing step, from raw materials to finished products. This 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 approximately 80 meters in length, to support our global operations. We began these operations in our tooling technology center in Warren, Rhode Island. We also manufacture our precision molding and assembly systems production capabilities at a facility in Taicang Port, 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. In 2020, we transitioned most of 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. 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 each 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 continuous improvement principles, 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 Vestas, GE Wind, Nordex, Siemens Gamesa Renewable Energy S.A. (Siemens Gamesa) and ENERCON GmbH (ENERCON), are some of the world’s largest wind turbine manufacturers. According to data from Bloomberg, our customers represented approximately 52% of the global onshore wind energy market, approximately 88% of that market excluding China, and 99% of the U.S. onshore wind turbine market over the three years ended December 31, 2019, 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 24, 2021, our existing wind blade supply agreements provide for minimum aggregate volume commitments from our customers of approximately \$2.8 billion and encourage our customers to purchase additional volume up to, in the aggregate, a total contract value of approximately \$4.6 billion through the end of 2024, 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.

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 typically 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.

Vestas

In 2014, we entered into a new supply agreement with Vestas to supply wind blades from a manufacturing facility in Dafeng, China. Based on the success of this manufacturing arrangement, we expanded our relationship with Vestas through additional supply agreements to manufacture wind blades at our manufacturing facilities in Turkey, Matamoros, Mexico and Yangzhou, China. Additionally, in 2018, we entered into a supply agreement with Vestas to supply wind blades from a new manufacturing facility that was built in Chennai, India and we commenced operations at this facility in the first quarter of 2020. In August 2020, we reached an agreement with Vestas to extend our supply agreement at our Turkey facility by one year through 2022. Each of the supply agreements with Vestas provide for a minimum number of wind blade sets to be purchased by Vestas 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 Vestas for each of the years under the supply agreements. Additionally, we create some of the model-specific tooling for Vestas. If either party commits a material breach of the supply agreement, the non-breaching party may terminate the supply agreement if the breach is not remedied or if the parties have not mutually agreed to plan for cure within 30 days after notice of breach has been given.

GE Wind

We have entered into multiple supply agreements with GE Wind to manufacture wind blades from two manufacturing facilities in Juárez, Mexico and our Newton, Iowa manufacturing facility. 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. In August 2018, GE Wind agreed to extend our existing supply agreement for one of our Mexico manufacturing facilities 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 agreed to transition to a larger blade model in our Newton, Iowa plant in early 2019 and to eliminate its option to terminate its supply agreement at this location prior to its December 2020 expiration. In July 2020, GE Wind agreed to extend our existing supply agreement in one of our Mexico plants by two years to 2022 and our existing supply agreement in our Newton Iowa plant by one year to 2021 with an option to extend through 2022 and added one additional wind blade manufacturing line in Mexico to provide blades for GE Wind's turbine technologies in North America in 2021. Unless otherwise terminated or renewed, our supply agreements with GE Wind are in effect until the end of 2021 for our Iowa facility and until the end of 2022 for our two Mexico facilities. 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.

Other Long-Term Supply Agreements

We have entered into other long-term supply agreements in China, Mexico, Turkey and India with Nordex, Siemens Gamesa and ENERCON. 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—Some of our long-term supply agreements with our customers are subject to early termination and volume reductions at the discretion of our customers, and any early termination of or reduced volumes of wind blades purchased under these agreements

would materially harm our business, financial condition and results of operations” 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 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. DOE, government laboratories, universities and our customers to innovate through cost sharing Advanced Manufacturing Innovation Initiative programs. In 2021, we will be collaborating with the University of Maine pursuant to a grant from the U.S. DOE’s Office of Energy Efficiency and Renewable Energy to develop a rapid, low-cost additive manufacturing solution (3D printing) for fabricating large, segmented wind blade molds. In February 2018, we entered into an agreement with Navistar to design and develop an all composite Class 8 tractor cab. 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. We believe incorporating composite materials into a Class 8 tractor cab offers multiple potential performance and efficiency advantages compared to traditional metals in terms of weight savings, reduced part counts, and non-corrosion. In the first quarter of 2019, we executed a joint development agreement with GE Wind to cooperatively develop advanced blade technology for future wind turbines.

We employ a highly experienced workforce of engineers in various facets of our business, from 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.

In July 2019, we acquired certain intellectual property and hired a team of engineering resources from the EUROS group, based in Berlin, Germany. This team of technical experts focuses on blade design, tooling, materials and process technology development, strengthened our technical capabilities in support of our global operations and growth. In addition, we established an advanced engineering center in Kolding, Denmark which provides technical and engineering resources to our manufacturing facilities and our customers.

Competition

The wind blade market is highly concentrated, competitive and subject to evolving customer needs and expectations. In 2017, GE Wind, our largest customer at the time, completed its acquisition of LM Wind Power (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 noted above, 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, including light, medium and heavy-duty trucks, buses and automobiles with clean propulsion systems or in meeting new and developing fuel economy 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 Juárez, Mexico 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. We ceased manufacturing composite bus bodies from our Newton, Iowa facility in the first quarter of 2020. In 2019, we made a capital investment of approximately \$11.5 million to develop a highly automated manufacturing line for the electric vehicle market within our Warren, Rhode Island facility, and we are currently in the process of commissioning this line. 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.

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 issued, filed and applied-for in a number of jurisdictions, including the United States, Germany, 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, 2020 and 2019, our backlog for wind blades and related products totaled \$1,197.7 million and \$1,038.9 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 Environmental Protection Agency (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 was to be phased down over the term of the PTC extension. Specifically, the PTC was 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 was to be reduced by 20% per year in 2017, 2018 and 2019, respectively. In December 2019, Congress extended the PTC through the end of 2020 and increased the rate from 40% to 60% for projects that either

commenced construction or met certain safe harbor requirements by the end of 2020 and are commissioned by the end of 2024. In December 2020, Congress extended the PTC through the end of 2021, continuing the rate of 60% for projects that either commenced construction or met certain safe harbor requirements by the end of 2021 and are commissioned by the end of 2025. In January 2021, the Biden administration announced several executive orders to promote renewable energy.

At the state level, as of December 31, 2020, 30 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 2050).

In addition, there are also increasing regulatory efforts globally to promote renewable power. In December 2020, the European Union (EU) agreed to reduce EU greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels. Similarly, in December 2020, China announced its goal to reach carbon neutrality by 2060, and in September 2019, India targeted to increase its renewable energy capacity to 450 gigawatts by 2030 and to 40% non-fossil fuel energy by 2030. Additionally, Turkey enacted Law No. 5346 in 2005, which was recently amended and extended in January 2021, to promote renewable-based electricity generation within their domestic electricity market through feed-in- tariffs and purchase obligations for distribution companies requiring purchases from certified renewable energy producers.

Human Capital

As of December 31, 2020, we employed over 14,900 full-time employees, approximately 1,300 of whom were located in the United States, 2,000 in China, 6,000 in Mexico, 4,100 in Turkey and 1,500 in India. 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.

Our human capital strategy focuses on creating an exceptional employee experience and ensuring that we foster a learning culture where our employees want to grow with us. Our primary focus areas of our human capital strategy are as follows:

Culture

We believe our unique culture is a key strategic advantage for us. Our associates are highly engaged and committed to the company, their teams, and the jobs they perform based on our most recent employee engagement surveys. This strong employee engagement is due in part to a strong sense of purpose given our role in the broader renewable energy supply chain. We believe strong employee engagement translates into a strong quality focus and orientation. It is through the efforts of our nearly 15,000 employees at year-end 2020 that we have been able to continue to achieve high levels of performance. When we select new persons to join our team, we ensure that the individuals have high levels of commitment and adaptability in addition to the skills needed for the role. Our employees embrace our core values of safety, operational excellence, commitment, integrity and leadership. Our team members bring our values to life by applying their diverse backgrounds and skillsets to the jobs they are performing, demonstrating high discretionary effort, and embracing our values in their day-to-day lives.

Safety

Safety is our most important and first core value. We strongly believe that all accidents are preventable and that every associate should return at the end of their shift to their families in the same healthy condition in which they showed up for work. To help drive these beliefs it is our goal to continuously improve our zero-harm culture and implement a global behavior-based safety program resulting in zero unsafe behaviors. Our 13 manufacturing facilities have safety management systems in place that cover their associates and activities. We ensure the safety of our associates to support our zero-harm culture in a variety of ways, starting with safety education. Safety education is the foundation for our other safety measures. Associates receive regular training on environmental, health and safety (EHS) related topics. This training includes but is not limited to:

- general awareness EHS training

- ergonomics training
- compliance training
- hazard-specific training as required for the job or task
- fire hazard and prevention training
- hazardous material training
- equipment-specific safety training
- safety incident and corrective action training

Diversity, Equity and Inclusion

We value diversity in all forms, especially diversity of thought, and aspire to create an environment that recognizes and celebrates the benefits that come with a diverse workforce. We know that diversity of our employee population makes us better and strive to continue to improve and act with intention in these areas.

As a global business, we have an incredible opportunity to benefit from the diversity we have in our company. We can and will do more to maximize the positive impact that diversity, equity, inclusion, and a feeling of belonging can bring. We believe that this and the rest of our vision statement for diversity, equity and inclusion is a solid representation of what we believe in, are committed to, and how we will hold associates and leaders accountable. We recognize that one of our greatest areas of opportunity is to increase the representation of women and overall racial and ethnic diversity at all levels of leadership as we add more talent to our leadership levels.

Talent

We market open jobs across multiple platforms such as our website, LinkedIn, internal postings and local job boards to ensure that our candidate pool is as diverse as possible. We promote having diversity on the interviewing and selection panel to ensure different points of view are considered as part of the final selection process. We enjoy high levels of retention across all of our geographies. Our overall turnover rate has continued to decline over the past three years on a global basis. We facilitate an annual talent review process in all regions and functional teams to promote the internal development and promotion of internal talent. We have enjoyed high participation in employee surveys, high engagement levels against industry normative data, and also facilitated a COVID and diversity equity and inclusion survey in 2020.

Environmental, Health and Safety

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. We are not aware of any pending environmental compliance or remediation matters that are reasonably likely to have a material adverse effect on our business, financial position or results of operations. However, failure by us to comply with applicable environmental and other requirements could result in fines, penalties, enforcement actions, third party claims, remediation actions, and could negatively impact our reputation with customers. We have adopted environmental, health and safety policies outlining our commitment to environmental responsibility and accountability. These policies apply to the company as a whole, and our vendors and suppliers and are available on our website. We have a company-wide focus on safety and have implemented a number of measures to promote workplace safety. Customers are increasingly focused on safety records in their sourcing decisions due to increased regulations to report all incidents that occur at their sites and the costs associated with such incidents.

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 <https://ir.tpicomposites.com/websites/tpicomposites/English/0/investor-relations.html> 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 & Ethics.

Information about our Executive Officers

The following table sets forth certain information regarding our Executive Officers as of February 24, 2021:

<u>Name</u>	<u>Age</u>	<u>Position</u>
William E. Siwek	58	President, Chief Executive Officer and Director
Bryan R. Schumaker	45	Chief Financial Officer
Ramesh Gopalakrishnan	53	Chief Operating Officer, Wind
James M. Hilderhoff	54	Chief Commercial Officer
Thomas J. Castle	49	Senior Vice President—Operations, Strategic Markets
Steven G. Fishbach	51	General Counsel and Secretary

William E. Siwek. Mr. Siwek joined us in August 2013 as our Chief Financial Officer. In May 2019, Mr. Siwek was named our President and ceased serving as our Chief Financial Officer. In May 2020, Mr. Siwek assumed the role of Chief Executive Officer and was elected to the Board of Directors. 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 also serves on the Board of Directors of the American Clean Power Association, a renewable energy industry trade group, which commenced operations in January 2021. Mr. Siwek holds B.S. degrees in Accounting and Economics from University of Redlands and is a Certified Public Accountant.

Bryan R. Schumaker. Mr. Schumaker joined us in May 2019 as our Chief Financial Officer. Prior to joining us, Mr. Schumaker served as the Chief Accounting Officer of First Solar, Inc. from July 2015 to May 2019 and the Chief Financial Officer of 8point3 Energy Partners, a publicly-traded limited partnership formed by First Solar and Sunpower Corporation to own, operate and acquire solar energy generation projects from July 2016 to July 2018. Mr. Schumaker also served as Assistant Corporate Controller of First Solar from April 2008 to December 2011 and Vice President, Corporate Controller from December 2011 to July 2015. Prior to working at First Solar, Mr. Schumaker worked for Swift Transportation from January 2003 to April 2008 in multiple roles, including Vice President, Corporate Controller. Prior to that, Mr. Schumaker worked for KPMG, LLP as a Supervising Senior for the Assurance Practice and for a BDO Alliance Firm as a Senior Audit Associate. Mr. Schumaker holds a B.B.A. degree in Accounting from the University of New Mexico. Mr. Schumaker also serves on the Board of Directors of the Arizona Manufacturing Extension Partnership.

Ramesh Gopalakrishnan. Mr. Gopalakrishnan joined us in September 2016 as Vice President, Technology, Transfer and Launch, and was promoted to Senior Vice President, Technology and Industrialization in August 2017 and Senior Vice President, Global Quality, Technology and Latin American Operations in February 2019. In May 2019, Mr. Gopalakrishnan was named our Chief Operating Officer – Wind. Prior to joining us, Mr. Gopalakrishnan served as Executive Vice President, Manufacturing for Senvion GmbH from May 2015 to August 2016 and Senior Vice President, Global Blades from February 2013 to April 2015. Prior to joining Senvion GmbH, Mr. Gopalakrishnan served as the Chief Executive Officer of Suzlon Energy Composites from February 2011 to January 2014, where he oversaw blade and mold factories in the United States, China and India and engineering centers in Europe. Prior to joining Suzlon Energy Composites, Mr. Gopalakrishnan served in various operations, supply chain and engineering roles at Halliburton Company and General Electric Company. Mr. Gopalakrishnan

holds a B.S. in Mechanical Engineering from the Indian Institute of Technology and a M.S. and Ph.D in Mechanical Engineering from the State University of New York at Stony Brook.

James M. Hilderhoff. Mr. Hilderhoff joined us in August 2020 as our Chief Commercial Officer. Prior to joining us, Mr. Hilderhoff served as the Chief Commercial Officer – North America for Wabtec Corporation, a publicly-traded leading global provider of equipment, systems, digital solutions, and value-added services for the freight and transit rail sectors, from February 2019 to July 2020. Prior to Wabtec Corporation's merger with General Electric Company's transportation business in February 2019, Mr. Hilderhoff served in sales, service, operations and marketing roles in various businesses of General Electric Company for over thirty years, including GE's transportation and power businesses. Mr. Hilderhoff served as General Manager, Global Sales and Marketing of GE's transportation business from January 2016 to February 2019, and also served as General Manager, Americas Services Operation for GE's transportation business from 2010 to December 2015. Mr. Hilderhoff holds an M.B.A. in Business Administration from the University of Pennsylvania, Wharton School of Business and a B.S. degree in Engineering Science from Pennsylvania State University.

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. In May 2019, Mr. Castle was named our Senior Vice President – Operations, Strategic Markets. 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, Vestas and GE Wind, accounted for 49.7% and 23.4%, respectively, of our total net sales for the year ended December 31, 2020, and 46.1% and 25.7%, respectively, of our total net sales for the year ended December 31, 2019, and 32.0% and 31.7%, respectively, of our total net sales for the year ended December 31, 2018. In addition, two customers, Nordex and Siemens Gamesa accounted for 15.3% and 4.7%, respectively, of our net sales for the year ended December 31, 2020, 16.1% and 5.1%, respectively, of our net sales for the year ended December 31, 2019, and 19.0% and 11.2%, respectively, of our net sales for the year ended December 31, 2018. Accordingly, we are substantially dependent on continued business from our current wind blade customers, and Vestas and GE Wind 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, and our reserves for warranty expenses might not be sufficient to cover all future costs.

Defects in the wind blades we manufacture are unpredictable and an inherent risk in manufacturing technically advanced products that involve a significant amount of manual labor and processes. Defects may arise from multiple causes, including design, engineering, materials, manufacturing and components failures as well as deficiencies in our manufacturing processes. 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 experienced wind blade 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. Wind blades that we have manufactured have also failed in the field. Any wind blade 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. Any of the foregoing could materially harm our business, operating results and financial condition.

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. 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 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 2020 and into 2021, we have undertaken and will undertake model transitions at several of our facilities for various customer demands. In 2020, we had several manufacturing lines in transition which adversely impacted our revenue and profitability. We currently expect to have manufacturing lines in transition during 2021 which could adversely affect our revenue and profitability in 2021. We typically share transition costs with the customer in connection with these changing customer demands, but any sharing is usually 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.

We have experienced, and could in the future experience, quality or operational issues in connection with plant construction or expansion, 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 four new manufacturing facilities in Mexico, one in Turkey, one in Yangzhou, China and one in Chennai, India. The construction of new plants and the expansion of existing plants involves significant time, cost and other risks. We generally expect our plants to generate losses in their first 12 to 18 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, defects or issues with product tooling, 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. 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. For example, in 2019, we experienced construction and startup delays with respect to our new manufacturing facility in Yangzhou, China. These delays resulted in us paying liquidated damages of \$7.8 million to one of our customers in 2019 and 2020.

Some of our long-term supply agreements with our customers are subject to early termination and volume reductions at the discretion of our customers, and any early termination of or reduced volumes of wind blades purchased under these agreements could materially harm our business, financial condition and results of operations.

Our current long-term supply agreements expire between the end of 2021 and the end of 2024. 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. Our 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. The amount of the annual purchase requirements typically decline in the later years of our long-term supply agreements. Our customers may not continue to maintain long-term supply agreements with us in the future. For example, Vestas has notified us that it does not intend to renew our Dafeng, China supply agreement, which expires at the end of 2021. If one or more of our customers terminate, or reduce the number of manufacturing lines and volumes of wind blades purchased, or fail to renew their long-term supply agreements with us, it would materially harm our business, financial condition and results of operations.

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, which typically provide producers of wind energy with favorable prices for wind generated electricity, to unsubsidized, 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, many of our wind blades are exported from our China, Turkey and India manufacturing facilities to the United States. In addition, tariffs imposed on components of wind turbines from China, including wind blades, has had a negative impact on demand for our wind blades manufactured in our Chinese manufacturing facilities. Consequently, demand for wind energy and our wind blade sales could be adversely affected by a variety of reasons and factors, and any downturn in demand for wind energy 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. For example, in 2019, we experienced shortages in the supply of balsa wood and other core materials. 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 2020, we procured approximately 25% of our raw materials from China so any weather events, strikes, other force majeure events or geopolitical developments impacting China could disrupt our supply chain. 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. For example, in 2020 and 2021, we have experienced several delays in receipt of certain raw materials used to make our products primarily due to COVID-19 outbreaks amongst port workers at certain ports in the United States. 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.

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 tariffs, 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;
- our customers' cost of transporting wind blades from our manufacturing facilities to wind farms;
- increases in the price or lack of availability of raw materials used to produce our wind blades;
- 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.

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 or health epidemics such as the COVID-19 pandemic; and
- labor unrest or shortages in skilled labor.

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, Turkey, and India. Since the third quarter of 2016, we have commenced operations at four new manufacturing facilities in Mexico, one in Turkey, one in Yangzhou, China and one in Chennai, India. For the years ended December 31, 2020, 2019 and 2018, approximately 89%, 88% and 84%, 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.

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 continue to 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 traditional (i.e. thermal) and other renewable energy sources. Decreases in the prices of electricity from traditional or 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. 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.

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. The competitive environment in the wind energy industry may become more challenging in the years ahead, particularly in the event of further consolidation in the industry, which could lead to us having even fewer customers. In addition, a significant percentage of wind turbine OEMs, including all 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. Some 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 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.

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 has been dependent in part upon governmental support through certain incentives including federal tax incentives and state RPS programs and may not be economically viable if a large number of these incentives are not continued. Government-sponsored tax incentive programs including the PTC, and the Investment Tax Credit (ITC), are expected to continue to support the U.S. growth of wind energy. The PTC and ITC were recently extended for an additional year through the end of 2021. In addition, there are also increasing regulatory efforts globally to promote renewable power.

Because of the long lead times necessary to develop wind energy projects, any uncertainty or delay in adopting, extending or renewing the PTC, ITC or other incentives promoting wind energy 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 ITC, 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.

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 and other key personnel including engineers in our various locations. In addition, we rely heavily on our management team, including William E. Siwek, our President and Chief Executive Officer; Ramesh Gopalakrishnan, our Chief Operating Officer - Wind; Bryan Schumaker, our Chief Financial Officer; and other senior management. Although we have executed an employment agreement with each of these executives, these executives and other senior management can resign with little or no notice to us. 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. Siwek, Gopalakrishnan, or Schumaker, other key members of senior management or other key personnel, and we do not have adequate succession plans in place, 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 startup challenges and incurred significant losses in connection with the supply of bus bodies to Proterra from our Newton, Iowa manufacturing facility. As result, we closed our Newton, Iowa bus body manufacturing facility in the first quarter of 2020, and consolidated our bus body manufacturing operation into our Warren, Rhode Island manufacturing facility and a manufacturing facility in Juárez, Mexico. 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.

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.

Risks Related to Our Business as a Whole

Our business, operations and financial condition during the year ended December 31, 2020 were adversely affected by the COVID-19 pandemic and we cannot estimate the duration of the COVID-19 pandemic and our business may be adversely affected in the future if the COVID-19 pandemic persists.

The COVID-19 pandemic adversely affected our business and operations during the year ended December 31, 2020. During the first quarter of 2020, our China manufacturing facilities were adversely impacted by the COVID-19 pandemic in the form of reduced production levels and COVID-19 related costs associated with the health and safety of our associates and non-productive labor. During the second quarter of 2020, all of our manufacturing facilities with the exception of our China manufacturing facilities and our Rhode Island manufacturing facility were required to temporarily suspend production or operate at reduced production levels due primarily to certain applicable government-mandated stay at home orders in response to the COVID-19 pandemic, demands from certain of our labor unions to suspend or reduce production and general safety concerns of our associates. By the end of the second quarter of 2020, most of our manufacturing facilities had returned to operating at or near normal production levels. We may be required to reinstate temporary production suspensions or volume reductions at our other manufacturing facilities to the extent there is a resurgence of COVID-19 cases in the regions where we operate or there is an outbreak of positive COVID-19 cases in any of our manufacturing facilities. In addition, although we currently have not experienced any significant disruptions in our global supply chain due to the COVID-19 pandemic, our global supply chain may in the future be adversely affected if the COVID-19 pandemic persists.

Our financial position, revenue, operating results, profitability and cash flows 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, profitability and cash flows 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 operating income of \$29.0 million for the three months ended September 30, 2020 to an operating loss of \$15.4 million for the three months ended March 31, 2020. 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;
- payment of liquidated damages to our customers for late deliveries of our 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;
- 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 or health epidemics such as the COVID-19 pandemic;
- changes in our effective tax rate;
- general economic conditions; and
- the complexity of the financial assumptions we must use for forecasting our revenue, profitability and operating results under the revenue recognition standard and the impact that unanticipated blade transitions have on those estimates.

As a result, our revenue, operating results, profitability and cash flows 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. 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, 2020 and 2019, our capital expenditures were \$65.8 million and \$80.2 million, respectively, including assets acquired under finance leases in 2020 and 2019 of \$0.2 million and \$5.8 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 facility in Chennai, India and the continued investment in our Turkey, Mexico, China and Iowa facilities. 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 multi-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 \$40 million to \$50 million. In addition, we estimate our annual maintenance capital expenditures to be between \$1 million to \$3 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 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, particularly 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.

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.

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;
- requiring us to potentially incur additional expenses to amend our London Interbank Offered Rate (LIBOR)-indexed loans to a new reference rate due to the planned phase out of the use of LIBOR;
- 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 under our senior secured 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 consist 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.

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's Occupational Safety and Health Administration, 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 March 2019, we entered into a settlement agreement with the Iowa Department of Labor pursuant to which we agreed to make a settlement payment of \$0.1 million and to implement certain safety enhancements at our Newton, Iowa manufacturing facility to fully resolve this matter.

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.

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 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.

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 38% of our workforce as of December 31, 2020, are covered by collective bargaining agreements. Our collective bargaining agreement for our Turkey facilities are in effect through the end of 2020 and we are in the process of negotiating an amendment for calendar year 2021. 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 an increase in their wage rate and an annual bonus. In February 2019, our manufacturing production employees in Matamoros, Mexico, who are represented by a labor union, went on strike also demanding an increase in their hourly wage rate and the payment of an annual bonus. During this strike, our Matamoros manufacturing facility stopped production for several weeks until we reached a revised agreement with our labor union. We recently amended our Matamoros collective bargaining agreement to adjust the salaries and bonuses payable to our associates for calendar year 2021 that are covered by this agreement.

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, breaches of data security and phishing and ransomware attacks could disrupt our operations. Any significant disruption or breach may materially harm our business, operating results or financial condition.

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, or that our transfer pricing arrangements with our foreign subsidiaries are improper, 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;
- our ability to successfully grow our transportation business;
- 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.

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, 2020, we had 36,563,798 shares of common stock outstanding. All shares can now be sold, subject to any applicable volume limitations under federal securities laws. We may issue debt or equity securities under our automatic shelf registration statement, which we filed in September 2020, or in other registered or unregistered convertible debt or equity offerings.

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, 2020, we had outstanding options to purchase 1,499,586 shares of our common stock, 668,454 restricted stock units and 650,523 performance stock units to our employees and non-employee directors. From time to time, we expect to grant additional options and other stock awards. 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.

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.

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, Denmark and Germany. 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 various information regarding our facilities as of February 24, 2021:

Location	Operating Segment	Year Commenced	Leased or Owned	Approximate Square Footage	Description of Use
Newton, IA, United States	U.S.	2008	Leased	337,922	Wind Blade Manufacturing Facility
Newton, IA, United States	U.S.	2018	Leased	114,078	Transportation Manufacturing Facility
Dafeng, China	Asia	2013	Leased	381,102	Wind Blade Manufacturing Facility
Dafeng, China	Asia	2015	Leased	446,034	Wind Blade Manufacturing Facility
Taicang Port, China	Asia	2007	Owned	208,445	Precision Molding Facility
Yangzhou, China	Asia	2018	Leased	934,133	Wind Blade Manufacturing Facility
Juárez, Mexico	Mexico	2013	Leased	345,984	Wind Blade Manufacturing Facility
Juárez, Mexico	Mexico	2016	Leased	453,096	Wind Blade Manufacturing Facility
Juárez, Mexico	Mexico	2017	Leased	339,386	Wind Blade Manufacturing Facility
Juárez, Mexico	Mexico	2018	Leased	300,277	Precision Molding Manufacturing Facility
Matamoros, Mexico	Mexico	2017	Leased	527,442	Wind Blade Manufacturing Facility
Izmir, Turkey	EMEA	2012	Leased	343,000	Wind Blade Manufacturing Facility
Izmir, Turkey	EMEA	2015	Leased	817,078	Wind Blade Manufacturing Facility
Warren, RI, United States	U.S.	2004	Leased	108,750	Precision Molding Development and Manufacturing and Research and Development Facility, Transportation Manufacturing Facility
Santa Teresa, NM, United States	Mexico	2014	Leased	503,710	Wind Blade Storage Facility
Scottsdale, AZ, United States	U.S.	2015	Leased	22,508	Corporate Headquarters
Kolding, Denmark	U.S.	2018	Leased	2,583	Advanced Engineering Center
Chennai, India	India	2019	Leased	776,280	Wind Blade Manufacturing Facility
Berlin, Germany	U.S.	2019	Leased	4,684	Engineering Center

Item 3. Legal Proceedings

For a discussion of our legal proceedings, refer to Note 14 – Commitments and Contingencies – (b) Legal Proceedings of the Notes to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

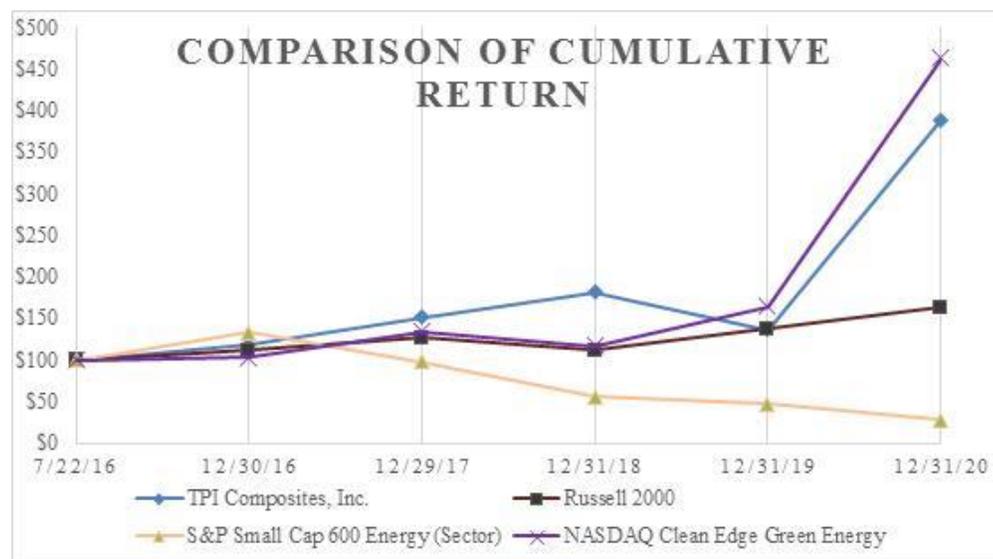
Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

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

Performance Graph

The following graph and table illustrate the total stockholder return from July 22, 2016 through December 31, 2020, 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	12/29/17	12/31/18	12/31/19	12/31/20
TPI Composites, Inc.	\$ 100.00	\$ 118.29	\$ 150.88	\$ 181.27	\$ 136.50	\$ 389.23
Russell 2000	\$ 100.00	\$ 111.89	\$ 126.60	\$ 111.19	\$ 137.56	\$ 162.82
S&P Small Cap 600 Energy (Sector)	\$ 100.00	\$ 133.11	\$ 97.60	\$ 55.64	\$ 47.19	\$ 28.17
NASDAQ Clean Edge Green Energy	\$ 100.00	\$ 102.59	\$ 134.16	\$ 116.50	\$ 163.93	\$ 462.91

Holdings

As of January 29, 2021, there was one stockholder 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 of this Annual Report on Form 10-K.

Certain of our subsidiaries are limited in their ability to declare dividends without first meeting statutory restrictions of China, including retained earnings as determined under Chinese-statutory accounting requirements. Until 50% (\$26.6 million) of registered capital is contributed to a surplus reserve, our China 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 China operations can pay dividends equal to 100% of after-tax profit assuming other conditions are met. As of December 31, 2020, the amount of the surplus reserve fund was \$7.0 million. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources” included in Part II, Item 7 of this Annual Report on Form 10-K.

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

None

Purchases of Equity Securities by the Issuer

The following table summarizes the total number of shares of our common stock that we repurchased during the three months ended December 31, 2020 from certain employees who surrendered common stock to pay the taxes in connection with the vesting of restricted stock units.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Maximum Number of Shares That May Yet Be Purchased Under the Program
October (October 1 - October 31)	—	\$ —	—	—
November (November 1 - November 30)	—	—	—	—
December (December 1 - December 31)	31,880	52.78	—	—
Total	31,880	\$ 52.78	—	—

Item 6. Selected Financial Data

Not applicable.

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.

OVERVIEW

Our Company

We are the only independent manufacturer of composite wind blades for the wind energy market with a global manufacturing footprint. We deliver high-quality, cost-effective composite solutions through long term relationships with leading original equipment manufacturers in the wind and transportation markets. We also provide field service inspection and repair services to our OEM customers and wind farm owners and operators, and supply high strength, lightweight and durable composite products to the transportation market. We are headquartered in Scottsdale, Arizona and operate factories throughout the U.S., China, Mexico, Turkey, and India. We operate additional engineering development centers in Denmark and Germany. For a further overview of our Company, refer to the discussion in “Business—Overview” included in Part I, Item 1 of this Annual Report on Form 10-K.

Our business operations are defined geographically into five geographic operating segments - (1) the United States (U.S.), (2) Asia, (3) Mexico, (4) Europe, the Middle East and Africa (EMEA) and (5) India. For further information regarding our operating segments, refer to Note 19 – Segment Reporting of the Notes to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K.

Key Trends Affecting our Business

We have identified the following material trends affecting our business:

- The COVID-19 pandemic adversely affected our business and operations during the year ended December 31, 2020. During the first quarter of 2020, our China manufacturing facilities were adversely impacted by the COVID-19 pandemic in the form of reduced production levels and COVID-19 related costs associated with the health and safety of our associates and non-productive labor. During the second quarter of 2020, all of our manufacturing facilities with the exception of our China manufacturing facilities and our Rhode Island manufacturing facility were required to temporarily suspend production or operate at reduced production levels due primarily to certain applicable government-mandated stay at home orders in response to the COVID-19 pandemic, demands from certain of our labor unions to suspend or reduce production and general safety concerns of our associates. By the end of the second quarter of 2020, most of our manufacturing facilities had returned to operating at or near normal production levels. Although all of our manufacturing facilities currently are operating at or near normal production levels, we may be required to reinstate temporary production suspensions or volume reductions at our manufacturing facilities or at our other locations to the extent there is a resurgence of COVID-19 cases in the regions where we operate or there is an outbreak of positive COVID-19 cases in any of our facilities.
- Our business seeks to capitalize on two major global trends: (i) increasing worldwide demand for renewable energy; and (ii) increasing worldwide demand for electric vehicles.
- 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. In 2020, our net sales grew to \$1.67 billion compared to net sales of \$1.44 billion in 2019.

- We believe the long term global demand for wind energy will continue to be strong and potentially accelerate in the coming years due to a multitude of factors, including: increased cost competitiveness of wind energy compared to fossil fuel generated electricity; increased demand from corporations and utility providers for renewable energy; recent international policy initiatives designed to promote the growth of renewable energy; and the Biden administration's proposed plans to promote renewable energy growth in the United States. However, many of the recently announced domestic and international policy initiatives to expand renewable energy have yet to be implemented into concrete legislation and regulations. As such, we expect our revenue in 2021 to continue to grow but at a rate lower than our revenue growth rate in 2020 due primarily to lower expected demand for wind blades manufactured in our China manufacturing facilities, but partially offset by stronger expected demand for wind blades manufactured in our Mexico, Turkey and India manufacturing facilities. We expect to produce slightly less wind blades sets in 2021 compared to 2020, but we expect that the average sales price per set in 2021 will be higher than in 2020 because we plan to produce larger wind blades in 2021.
- During the last several years, many wind turbine OEMs have increased the outsourced production of wind blades and other key components to specialized manufacturers to meet the 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 five OEM customers since 2012, 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.
- 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 generally do not fully cover the transition costs and lost margin. In 2020, we postponed several wind blade model transitions due to the COVID-19 pandemic and also had a significant number of lines starting up in our new manufacturing facility in Chennai, India, which had an adverse impact on our results of operations and profitability in 2020. As such, we expect to have a larger number of lines in transition during 2021, which will have an adverse impact on our results of operations for 2021. We expect these line transitions to provide a foundation for longer term revenue growth and profitability as these lines ramp up to full production levels.
- We expect our new manufacturing facilities to generally generate operating losses in their first 12 to 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.

- 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 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 24, 2021, our long-term wind and transportation supply agreements provide for minimum aggregate volume commitments from our customers of approximately \$2.8 billion and encourage our customers to purchase additional volume up to, in the aggregate, a total contract value of approximately \$4.6 billion through the end of 2024. 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. 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 our plants are underutilized due to market conditions. 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.
- As the global 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. We believe there is an increasing demand for composites products for electric vehicles. As part of our diversification strategy, we have made significant investments to expand our transportation business during the last several years. In 2018 through 2020, we experienced significant losses relating to our transportation business and experienced operational challenges as we are expanding this business. Specifically, we experienced extended startup delays and challenges with respect to our Newton, Iowa transportation facility, which had an adverse impact on our results of operations in 2019 and 2020. We ceased manufacturing composite bus bodies from our Newton, Iowa manufacturing facility in the first quarter of 2020 and consolidated these operations into our Warren, Rhode Island manufacturing facility. From 2018 to 2020, we invested approximately \$50 million in our transportation business. We expect our transportation business will continue to operate at a loss in 2021 and expect to invest between approximately \$15 million and \$20 million in our transportation business in 2021.

COMPONENTS OF RESULTS OF OPERATIONS

Net Sales

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

Cost of Goods Sold

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

Startup and transition costs are primarily unallocated fixed overhead costs and underutilized direct labor costs incurred during the period production facilities are transitioning wind blade models and ramping up manufacturing. All direct labor costs are included in the measure of progress towards completion of the relevant performance obligation when determining revenue to be recognized during the period. 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, these costs as a percentage of net sales are 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 primarily relate to the unallocated portion of costs 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.

The unallocated research and development expenses incurred at our Warren, Rhode Island location as well as at our Kolding, Denmark advanced engineering center and our Berlin, Germany engineering center are also included in general and administrative expenses. For the years ended December 31, 2020, 2019 and 2018, total research and development expenses totaled \$1.0 million, \$1.0 million and \$0.8 million, respectively.

Loss on Sale of Assets and Asset Impairments

Loss on sale of assets represents the losses on the sale of certain receivables, on a non-recourse basis under supply chain financing arrangements with our customers, to financial institutions and losses on the sale of other assets at our corporate and manufacturing facilities. Asset impairments represent the losses on the impairment of our assets at our corporate and manufacturing facilities.

Restructuring Charges

Restructuring charges primarily consist of employee severance, one-time termination benefits and ongoing benefits related to the reduction of our workforce and other costs associated with exit activities, which may include costs related to leased facilities to be abandoned and facility and employee relocation costs.

Other Income (Expense)

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

Income Taxes

Income taxes 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, Turkey and India. The income tax rate, tax provisions, deferred tax assets and liabilities vary according to the jurisdiction in which the income or loss arises. Tax laws are complex and subject to different interpretations by management and the respective governmental taxing authorities and require us to exercise judgment in determining our income tax provision, our deferred tax assets and liabilities and the valuation allowance recorded against our net deferred tax assets.

KEY 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 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 produced, estimated megawatts of energy capacity to be generated by wind blade sets produced, utilization, dedicated manufacturing lines, and manufacturing lines installed, which help us evaluate our operational performance. We believe that these measures are useful to investors in evaluating our performance.

Key Financial Measures

The key financial measures as of and for the years ended December 31 are as follow:

	2020	2019	2018
		(in thousands)	
Net sales	\$ 1,670,137	\$ 1,436,500	\$ 1,029,624
Net income (loss)	(19,027)	(15,708)	5,279
EBITDA(1)	52,323	54,009	42,308
Adjusted EBITDA(1)	94,498	85,841	68,173
Capital expenditures	65,666	74,408	52,688
Net cash provided by (used in) operating activities	37,570	57,084	(3,258)
Free cash flow(1)	(28,096)	(17,324)	(55,946)
Total debt, net of debt issuance costs and discount	216,867	141,389	137,623
Net debt(1)	(88,061)	(71,779)	(53,155)

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

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

Our use of 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 share-based compensation expense on equity-based incentive awards to our officers, employees, directors and consultants;
- adjusted EBITDA does not reflect the foreign currency income or losses in our operations;
- adjusted EBITDA does not reflect the gains or losses on the sale of assets and asset impairments;
- adjusted EBITDA does not reflect restructuring charges; 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 herein. Our presentations of EBITDA and adjusted EBITDA should not be construed as suggesting that our future results will be unaffected by these expenses or any unusual or non-recurring items. When evaluating our performance, you should consider EBITDA and adjusted EBITDA alongside other financial performance measures, including our net income (loss) and other GAAP measures.

Free cash flow

We define free cash flow as net cash provided by (used in) 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. 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 manufacturing facilities and expanding existing manufacturing facilities, as well as for capital expenditure requirements.

The following table reconciles our non-GAAP key financial measures to the most directly comparable GAAP measures:

EBITDA and adjusted EBITDA for the years ended December 31 are reconciled as follows:

	2020	2019	2018
	(in thousands)		
Net income (loss)	\$ (19,027)	\$ (15,708)	\$ 5,279
Adjustments:			
Depreciation and amortization	49,667	38,580	26,429
Interest expense (net of interest income)	10,399	8,022	10,236
Loss on extinguishment of debt	—	—	3,397
Income tax provision (benefit)	11,284	23,115	(3,033)
EBITDA	52,323	54,009	42,308
Share-based compensation expense	10,352	5,681	7,795
Foreign currency loss, net	19,986	4,107	13,489
Loss on sale of assets and asset impairments	7,748	18,117	4,581
Restructuring charges, net	4,089	3,927	—
Adjusted EBITDA	\$ 94,498	\$ 85,841	\$ 68,173

Free cash flow for the years ended December 31 is reconciled as follows:

	2020	2019	2018
	(in thousands)		
Net cash provided by (used in) operating activities	\$ 37,570	\$ 57,084	\$ (3,258)
Less capital expenditures	(65,666)	(74,408)	(52,688)
Free cash flow	\$ (28,096)	\$ (17,324)	\$ (55,946)

Net debt as of December 31 is reconciled as follows:

	2020	2019	2018
	(in thousands)		
Cash and cash equivalents	\$ 129,857	\$ 70,282	\$ 85,346
Less total debt, net of debt issuance costs	(216,867)	(141,389)	(137,623)
Less debt issuance costs	(1,051)	(672)	(878)
Net debt	\$ (88,061)	\$ (71,779)	\$ (53,155)

Key Operating Metrics (1)

The key operating metrics as of and for the year ended December 31 are as follows:

	2020	2019	2018
Sets	3,544	3,189	2,423
Estimated megawatts	12,080	9,598	6,560
Utilization	81%	79%	71%
Dedicated manufacturing lines	53	52	55
Manufacturing lines installed	55	48	43

(1) See below for more information on each of our key operating metrics.

Sets represents the number of wind blade sets, consisting of three wind blades each, which we produced 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.

Estimated megawatts are the energy capacity to be generated by wind blade sets produced during the period. Our estimate is based solely on name-plate capacity of the wind turbine on which the wind blades we manufacture

are expected to be installed. We monitor estimated megawatts and believe that presenting estimated megawatts to investors is helpful because we believe that it is a commonly followed measurement of energy capacity across our industry and provides an indication of our share of the overall wind blade market.

Utilization represents the percentage of the number of wind blades invoiced during the period compared to the total potential wind blade capacity of the manufacturing lines installed during the period. We monitor utilization because we believe it helps investors to better understand how close we are to operating at maximum production capacity.

Dedicated manufacturing lines are the number of wind blade manufacturing lines that we have dedicated to our customers pursuant to our long-term supply agreements at the end of the period. We monitor dedicated manufacturing lines and believe that presenting this metric to investors is helpful because we believe that the number of dedicated manufacturing lines is the best indicator of demand for the wind blades we manufacture for customers under our long-term supply agreements in any given period. Lines become dedicated upon the execution of a long-term supply agreement; this means that lines are typically dedicated before they are installed.

Manufacturing lines installed represents the number of wind blade manufacturing lines installed and either in operation, startup or transition during 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. From time to time, we have manufacturing lines installed that are not dedicated to our customers pursuant to a long-term supply agreement.

RESULTS OF OPERATIONS

Year Ended December 31, 2020 Compared to Year Ended December 31, 2019

The following table summarizes certain of our operating results as a percentage of net sales for the years ended December 31 that have been derived from our consolidated statements of operations:

	2020		2019	
Net sales	100.0	%	100.0	%
Cost of sales	93.5		89.8	
Startup and transition costs	2.7		4.8	
Total cost of goods sold	96.2		94.6	
Gross profit	3.8		5.4	
General and administrative expenses	2.0		2.8	
Loss on sale of assets and asset impairments	0.5		1.3	
Restructuring charges, net	0.2		0.2	
Income from operations	1.1		1.1	
Total other expense	(1.6)		(0.6)	
Income (loss) before income taxes	(0.5)		0.5	
Income tax provision	(0.6)		(1.6)	
Net loss	(1.1)	%	(1.1)	%

Net sales

Consolidated discussion

The following table summarizes our net sales by product/service for the years ended December 31:

	2020		2019		Change		
					\$	%	
			(in thousands)				
Wind blade sales	\$	1,580,055	\$	1,328,717	\$	251,338	18.9%
Precision molding and assembly systems sales		28,073		48,680		(20,607)	-42.3%
Transportation sales		36,196		28,870		7,326	25.4%
Other sales		25,813		30,233		(4,420)	-14.6%
Total net sales	\$	1,670,137	\$	1,436,500	\$	233,637	16.3%

The increase in net sales of wind blades was primarily driven by a 11% increase in the number of wind blades produced during the year ended December 31, 2020 as compared to the same period in 2019 as a result of increased production at our China, Mexico, India and Iowa facilities. The increase was also due to a higher average sales price due to the mix of wind blade models produced during the year ended December 31, 2020 compared to the same period in 2019. Net sales from the manufacturing of precision molding and assembly systems decreased, primarily in Asia, during the year ended December 31, 2020 as compared to the same period in 2019, primarily due to our customers deferring a number of blade model transitions due to the COVID-19 pandemic. Additionally, there was an increase in transportation and other sales during the year ended December 31, 2020 as compared to the same period in 2019. The fluctuating U.S. dollar against the Euro in our Turkey operations and the Chinese Renminbi in our China operations had a favorable impact of 0.1% on consolidated net sales for the year ended December 31, 2020 as compared to 2019. Although our net sales increased for the year ended December 31, 2020 compared to the same period in 2019, we estimate that our net sales were adversely impacted by approximately \$148.0 million, based upon 352 wind blade sets, which we had forecasted to produce at our Mexico, China, Iowa, Turkey and India manufacturing facilities in the periods under non-cancellable purchase orders associated with our long-term contracts but were unable to do so as a result of the COVID-19 pandemic. The COVID-19 pandemic required these manufacturing facilities to either temporarily suspend production or operate at reduced production levels primarily during the first and second quarters of 2020 as a result of certain applicable government-mandated stay at home orders in response to the COVID-19 pandemic, demands from certain of our labor unions to suspend or reduce production and general safety concerns of our associates.

Segment discussion

The following table summarizes our net sales by our five geographic operating segments for the years ended December 31:

	2020		2019		Change		
					\$	%	
			(in thousands)				
U.S.	\$	181,941	\$	169,317	\$	12,624	7.5%
Asia		527,083		393,809		133,274	33.8%
Mexico		495,839		435,606		60,233	13.8%
EMEA		373,545		437,081		(63,536)	-14.5%
India		91,729		687		91,042	NM
Total net sales	\$	1,670,137	\$	1,436,500	\$	233,637	16.3%

NM – not meaningful.

U.S. Segment

The following table summarizes our net sales by product/service for the U.S. segment for the years ended December 31:

			Change	
	2020	2019	\$	%
	(in thousands)			
Wind blade sales	\$ 135,415	\$ 120,125	\$ 15,290	12.7%
Precision molding and assembly systems sales	—	3,774	(3,774)	NM
Transportation sales	33,849	28,523	5,326	18.7%
Other sales	12,677	16,895	(4,218)	-25.0%
Total net sales	\$ 181,941	\$ 169,317	\$ 12,624	7.5%

The increase in the U.S. segment's net sales of wind blades was primarily due to a 14% increase in the number of wind blades produced in the year ended December 31, 2020 as compared to the same period in 2019, as well as a higher average sales price due to the mix of wind blade models produced in the comparable periods. Although our U.S. net sales increased for the year ended December 31, 2020 compared to the same period in 2019, our U.S. net sales were adversely impacted due to reduced production levels at our U.S. manufacturing facilities due to the COVID-19 pandemic primarily during the second quarter of 2020.

Asia Segment

The following table summarizes our net sales by product/service for the Asia segment for the years ended December 31:

			Change	
	2020	2019	\$	%
	(in thousands)			
Wind blade sales	\$ 511,090	\$ 366,206	\$ 144,884	39.6%
Precision molding and assembly systems sales	13,134	25,203	(12,069)	-47.9%
Other sales	2,859	2,400	459	19.1%
Total net sales	\$ 527,083	\$ 393,809	\$ 133,274	33.8%

The increase in the Asia segment's net sales of wind blades was primarily due to a 22% net increase in the number of wind blades produced in the year ended December 31, 2020 as compared to the same period in 2019 and an increase in the average sales price of wind blades due to a change in the mix of wind blades produced in the two comparative periods. Although our Asia net sales increased for the year ended December 31, 2020 compared to the same period in 2019, our Asia net sales were adversely impacted due to reduced production levels at our Asia manufacturing facilities due to the COVID-19 pandemic primarily during the first quarter of 2020. Net sales from the manufacturing of precision molding and assembly systems during the 2020 period decreased by \$12.1 million as compared to the 2019 period primarily due to our customers deferring a number of blade model transitions due to the COVID-19 pandemic.

Mexico Segment

The following table summarizes our net sales by product/service for the Mexico segment for the years ended December 31:

	2020	2019	Change	
			\$	%
	(in thousands)			
Wind blade sales	\$ 472,994	\$ 410,337	\$ 62,657	15.3%
Precision molding and assembly systems sales	14,939	19,703	(4,764)	-24.2%
Transportation sales	2,347	347	2,000	NM
Other sales	5,559	5,219	340	6.5%
Total net sales	\$ 495,839	\$ 435,606	\$ 60,233	13.8%

The increase in the Mexico segment's net sales of wind blades reflects a 18% net increase in overall wind blade volume and an increase in the average sales price of wind blades due to a change in the mix of wind blades produced in the two comparative periods. In addition, our 2019 net sales were impacted by the employees strike at our Matamoros production facility. Although our Mexico net sales increased for the year ended December 31, 2020 compared to the same period in 2019, our Mexico net sales were adversely impacted due to reduced production levels at our Mexico manufacturing facilities due to the COVID-19 pandemic primarily during the second quarter of 2020.

EMEA Segment

The following table summarizes our net sales by product/service for the EMEA segment for the years ended December 31:

	2020	2019	Change	
			\$	%
	(in thousands)			
Wind blade sales	\$ 368,907	\$ 431,362	\$ (62,455)	-14.5%
Other sales	4,638	5,719	(1,081)	-18.9%
Total net sales	\$ 373,545	\$ 437,081	\$ (63,536)	-14.5%

The decrease in the EMEA segment's net sales of wind blades was driven by a 22% decrease in wind blade production at our two Turkey plants due to transitions and reduced production levels at these manufacturing facilities due to the COVID-19 pandemic primarily during the second quarter of 2020. The decrease was partially offset by an increase in the average sales price of wind blades delivered in the comparative periods and an increase in the year over year number of wind blades still in the production process at the end of the period. The fluctuating U.S. dollar relative to the Euro had a favorable impact of 0.3% on net sales during the year ended December 31, 2020 as compared to the 2019 period.

India Segment

The following table summarizes our net sales by product/service for the India segment for the years ended December 31:

	2020		2019		Change		
					\$	%	
			(in thousands)				
Wind blade sales	\$	91,649	\$	687	\$	90,962	NM
Other sales		80		—		80	NM
Total net sales	\$	91,729	\$	687	\$	91,042	NM

The increase in the India segment's net sales of wind blades was driven by the startup of production in 2020. No material production took place in 2019.

Total cost of goods sold

The following table summarizes our total cost of goods sold for the years ended December 31:

	2020		2019		Change		
					\$	%	
			(in thousands)				
Cost of sales	\$	1,561,432	\$	1,290,619	\$	270,813	21.0%
Startup and transition costs		44,606		68,033		(23,427)	-34.4%
Total cost of goods sold	\$	1,606,038	\$	1,358,652	\$	247,386	18.2%
% of net sales		96.2%		94.6%			1.6%

Total cost of goods sold for the year ended December 31, 2020 was \$1,606.0 million and included \$25.9 million related to lines in startup and \$18.7 million related to lines in transition during the period. This compares to total cost of goods sold for the year ended December 31, 2019 of \$1,358.7 million and included \$48.5 million related to lines in startup and \$19.5 million related to lines in transition during the period. Cost of goods sold as a percentage of net sales increased by approximately two percentage points during the year ended December 31, 2020 as compared to the same period in 2019, driven primarily by the increase in warranty costs primarily relating to a remediation campaign for a specific wind blade model for one of our customers, and COVID-19 related costs associated with the health and safety of our associates and non-productive labor, partially offset by a decrease in startup and transition costs, the impact of savings in raw material costs and foreign currency fluctuations. The fluctuating U.S. dollar against the Euro, Turkish Lira, Chinese Renminbi and Mexican Peso had a favorable impact of 1.5% on consolidated cost of goods sold for the year ended December 31, 2020 as compared to 2019.

General and administrative expenses

The following table summarizes our general and administrative expenses for the years ended December 31:

	2020		2019		Change		
					\$	%	
			(in thousands)				
General and administrative expenses	\$	33,496	\$	39,916	\$	(6,420)	-16.1%
% of net sales		2.0%		2.8%			-0.8%

The decrease in general and administrative expenses as a percentage of net sales for the year ended December 31, 2020 as compared to the same period in 2019 was primarily driven by lower travel and training costs due to the COVID-19 pandemic.

Loss on sale of assets and asset impairments

The following table summarizes our loss on sale of assets and asset impairments for the years ended December 31:

	2020		2019		Change		
					\$	%	
	(in thousands)						
Loss on sale of assets and asset impairments	\$	7,748	\$	18,117	\$	(10,369)	-57.2%
% of net sales		0.5%		1.3%			-0.8%

The decrease in the loss on sale of assets and asset impairments for the year ended December 31, 2020 as compared to the same period in 2019 was primarily due to: (i) a decrease of \$4.4 million in asset impairment charges primarily related to the shutdown of our second Newton, Iowa facility in 2019, (ii) a decrease of \$4.1 million in losses on the sale of assets at our corporate and manufacturing facilities, and (iii) lower losses on the sale of receivables under supply chain financing arrangements with our customers in the current year period due to decreasing interest rates as compared to the equivalent prior year period.

Restructuring charges, net

Restructuring charges, net, for the year ended December 31, 2020 totaled \$4.1 million. These charges primarily related to downsizing at our Dafeng, China manufacturing facility, comprised of \$3.8 million of severance benefits to terminated employees, and \$0.2 million of other charges, primarily related to exit costs, at our second Newton, Iowa facility. The \$3.8 million of severance benefits relating to our Dafeng, China facility were paid to terminated employees in January 2021. Restructuring charges, net, for the year ended December 31, 2019 totaled \$3.9 million. These charges primarily related to the closing of our Taicang City, China manufacturing facility, comprised of \$3.3 million of severance benefits to terminated employees and \$0.6 million of other charges, primarily related to exit costs.

Income (loss) from operations

Segment discussion

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

	2020		2019		Change		
					\$	%	
	(in thousands)						
U.S.	\$	(40,991)	\$	(78,278)	\$	37,287	47.6%
Asia		62,869		24,132		38,737	160.5%
Mexico		(9,611)		3,533		(13,144)	NM
EMEA		23,331		70,449		(47,118)	-66.9%
India		(16,832)		(3,948)		(12,884)	NM
Total income from operations	\$	18,766	\$	15,888	\$	2,878	18.1%
% of net sales		1.1%		1.1%			0.0%

U.S. Segment

The decrease in the loss from operations in the U.S. segment for the year ended December 31, 2020 as compared to the same period in 2019 was primarily due to: (i) the decreased costs related to the shutdown of our Newton, Iowa transportation facility, (ii) the decrease in transition costs at our Newton, Iowa blade facility, (iii) the increase in wind blade volume, (iv) the increase in the average sales price of wind blades and (v) a decrease in general and administrative expenses, partially offset by increased direct material costs at our Newton, Iowa blade facility. Although our U.S. loss from operations decreased for the year ended December 31, 2020 compared to the same period in 2019, our income from operations for the year ended December 31, 2020 was adversely impacted due to reduced production levels at our U.S. blade manufacturing facility due to the COVID-19 pandemic during the

second quarter of 2020 and COVID-19 related costs associated with the health and safety of our associates and non-productive labor.

Asia Segment

The increase in the income from operations in the Asia segment for the year ended December 31, 2020 as compared to the same period in 2019 was primarily due to the net increase in overall wind blade volume and increase in the average sales price of wind blades, a decrease in the startup and transition costs and lower direct labor costs. The fluctuating U.S. dollar against the Chinese Renminbi had an unfavorable impact of 0.3% on cost of goods sold for the year ended December 31, 2020 as compared to the 2019 period. Although our Asia income from operations increased for the year ended December 31, 2020 as compared to the same period in 2019, our income from operations was adversely impacted due to reduced production levels at our Asia manufacturing facilities due to the COVID-19 pandemic during the first quarter of 2020 and COVID-19 related costs associated with the health and safety of our associates and non-productive labor.

Mexico Segment

The decrease in income from operations in the Mexico segment for the year ended December 31, 2020 as compared to the same period in 2019 was primarily due to increased warranty costs, the reduced production levels at our Mexico manufacturing facilities due to the COVID-19 pandemic during the second quarter of 2020 and COVID-19 related costs associated with the health and safety of our associates and non-productive labor. These increased costs were partially offset by the overall increase in wind blade volume, an increase in the average sales price of wind blades, decreased startup and transition costs, favorable foreign currency fluctuations as well as from savings in raw material costs. The fluctuating U.S. dollar relative to the Mexican Peso had a favorable impact of 1.9% on cost of goods sold for the year ended December 31, 2020 as compared to 2019.

EMEA Segment

The decrease in income from operations in the EMEA segment for the year ended December 31, 2020 as compared to the same period in 2019 was primarily driven by increased warranty costs, decreased wind blade production at our two Turkey manufacturing facilities due to the COVID-19 pandemic during the second quarter of 2020 and COVID-19 related costs associated with the health and safety of our associates and non-productive labor, the increased transition costs at one of our Turkey manufacturing facilities, partially offset by favorable foreign currency fluctuations. The fluctuating U.S. dollar relative to the Turkish Lira and Euro had a favorable impact of 3.2% on cost of goods sold for the year ended December 31, 2020 as compared to 2019.

India Segment

The increase in the loss from operations in the India segment for the year ended December 31, 2020 as compared to the same period in 2019 was primarily due to the increased startup costs related to our India manufacturing facility during 2020.

Other income (expense)

The following table summarizes our total other income (expense) for the years ended December 31:

			Change	
	2020	2019	\$	%
	(in thousands)			
Interest income	\$ 102	\$ 157	\$ (55)	-35.0%
Interest expense	(10,501)	(8,179)	(2,322)	-28.4%
Foreign currency loss, net	(19,986)	(4,107)	(15,879)	NM
Miscellaneous income	3,876	3,648	228	6.3%
Total other expense	\$ (26,509)	\$ (8,481)	\$ (18,028)	NM

The increase in the total other expense for the year ended December 31, 2020 as compared to the same period in 2019 was primarily due to increases in foreign currency loss, net primarily due to net Euro liability exposure against the Turkish Lira in the current year period as compared to the same period in 2019.

Income tax provision

The following table summarizes our income tax provision for the years ended December 31:

	2020		2019		Change		
					\$	%	
	(in thousands)						
Income tax provision	\$	11,284	\$	23,115	\$	(11,831)	-51.2%
Effective tax rate		-145.7%		312.1%			

The decrease in the income tax provision for the year ended December 31, 2020 as compared to the same period in 2019 was primarily due to tax benefits from the effect of tax law changes and the release of valuation allowances in certain jurisdictions, partially offset by lower pretax income related to the earnings mix by jurisdiction and unrecognized tax benefits in the year ended December 31, 2020 as compared to the same period in 2019.

Net loss

The following table summarizes our net loss for the years ended December 31:

	2020		2019		Change		
					\$	%	
	(in thousands)						
Net loss	\$	19,027	\$	15,708	\$	3,319	21.1%

The increase in the net loss for the year ended December 31, 2020 as compared to the same period in 2019 was primarily due to the reasons set forth above. In addition, we estimate that our net loss during the year ended December 31, 2020 was adversely impacted by approximately \$26.5 million, net of taxes, based upon the forecasted gross margin on the wind blade sets we had forecasted to produce at our Mexico, China, Iowa, Turkey and India manufacturing facilities in the period under non-cancellable purchase orders associated with our long-term contracts but were unable to do so as a result of the COVID-19 pandemic. The COVID-19 pandemic required these manufacturing facilities to either temporarily suspend production or operate at reduced production levels due primarily to certain applicable government-mandated stay at home orders in response to the COVID-19 pandemic, demands from certain of our labor unions to suspend or reduce production and general safety concerns of our associates. In addition, during the period we incurred \$15.5 million, net of taxes, of COVID-19 related costs associated with the health and safety of our associates and non-productive labor. The diluted net loss per share was \$0.54 for the year ended December 31, 2020, compared to a diluted net loss per share of \$0.45 for the year ended December 31, 2019.

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

For a comparison of our results of operations for the years ended December 31, 2019 and 2018, see “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations” included in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on March 2, 2020 incorporated herein by reference.

LIQUIDITY AND CAPITAL RESOURCES

As a result of the uncertainty relating to: (i) the rapidly evolving nature, magnitude and duration of the COVID-19 pandemic, (ii) the variety of measures implemented by governments around the world to address its effects and (iii) the impact on our manufacturing operations, we have and will continue to manage our liquidity to ensure our long-term viability until the COVID-19 pandemic abates. During the year ended December 31, 2020, we had net borrowings of \$58.7 million under our Credit Agreement. In addition, during the year ended December 31, 2020, we entered into or amended four unsecured credit agreements with four Turkish financial institutions resulting in net borrowings of \$25.1 million and current availability of \$52.9 million.

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, debt service costs and warranty costs. Our capital expenditures have been primarily related to machinery and equipment for new facilities or facility expansions. Historically, we have funded our working capital needs through cash flows from operations, the proceeds received from our credit facilities and from proceeds received from the issuance of stock. We had net borrowings under our financing arrangements of \$75.7 million for the year ended December 31, 2020 as compared to net repayments under our financing arrangements of \$2.1 million and \$8.9 million for the years ended December 31, 2019 and 2018, respectively. As of December 31, 2020 and 2019, we had \$217.9 million and \$142.1 million in outstanding indebtedness, excluding debt issuance costs, respectively. As of December 31, 2020, we had an aggregate of \$120.5 million of remaining capacity and \$94.2 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. Based upon current and anticipated levels of operations, we believe that cash on hand, available credit facilities and cash flow from operations will be adequate to fund our working capital and capital expenditure requirements and to make required payments of principal and interest on our indebtedness over the next twelve months.

We anticipate that any new facilities and future facility expansions will be funded through cash flows from operations, the incurrence of other indebtedness and other potential sources of liquidity. At December 31, 2020 and 2019, we had unrestricted cash, cash equivalents and short-term investments totaling \$129.9 million and \$70.3 million, respectively. The December 31, 2020 balance includes \$61.0 million of cash located outside of the United States, including \$47.4 million in China, \$6.0 million in Turkey, \$5.0 million in India, \$2.1 million in Mexico and \$0.5 million in other countries. In February 2020, we entered into an Incremental Facility Agreement with the current lenders to our Credit Agreement and an additional lender, pursuant to which the aggregate principal amount of our revolving credit facility under the Credit Agreement was increased from \$150.0 million to \$205.0 million.

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 China, including retained earnings as determined under Chinese-statutory accounting requirements. Until 50% (\$26.6 million) of registered capital is contributed to a surplus reserve, our China 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 China operations can pay dividends equal to 100% of after-tax profit assuming other conditions are met. At December 31, 2020, the amount of the surplus reserve fund was \$7.0 million.

Cash Flow Discussion

The following table summarizes our key cash flow activity for the years ended December 31:

	2020	2019	\$ Change
	(in thousands)		
Net cash provided by operating activities	\$ 37,570	\$ 57,084	\$ (19,514)
Net cash used in investing activities	(65,666)	(75,510)	9,844
Net cash provided by financing activities	88,612	970	87,642
Impact of foreign exchange rates on cash, cash equivalents and restricted cash	(2,069)	(171)	(1,898)
Net change in cash, cash equivalents and restricted cash	\$ 58,447	\$ (17,627)	\$ 76,074

Operating Cash Flows

Net cash provided by operating activities decreased by \$19.5 million for the year ended December 31, 2020 as compared to the same period in 2019 primarily as the result of decreased operating results and certain changes in our working capital.

Investing Cash Flows

Net cash used in investing activities decreased by \$9.8 million for the year ended December 31, 2020 as compared to the same period in 2019 primarily as the result of a decrease in capital expenditures.

We anticipate fiscal year 2021 capital expenditures of between \$55 million to \$65 million and we estimate that the cost that we will incur after December 31, 2020 to complete our current projects in process will be approximately \$13.8 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 our manufacturing facility in Chennai, India and the continued investment in our existing Turkey, Mexico, China and U.S. facilities.

Financing Cash Flows

Net cash provided by financing activities increased by \$87.6 million for the year ended December 31, 2020 as compared to the same period in 2019 primarily as the result of increased borrowings on our revolving loans and other growth-related debt, as well as increased proceeds from the exercise of stock options.

Our Indebtedness

For a discussion of our indebtedness, refer to Note 11 - 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.

Other Contingencies

For a discussion of our legal proceedings, refer to Note 14 – Commitments and Contingencies – (b) Legal Proceedings of the Notes to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K.

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, 2020 and 2019, we had accrued warranty reserves totaling \$50.9 million and \$47.6 million, respectively.

As of December 31, 2020, we had no material operating expenditures for environmental matters, including government imposed remedial or corrective actions, during the year ended December 31, 2020.

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 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 the consolidated financial statements and related notes.

Our segments enter into accounts receivable assignment agreements with various financial institutions. Under these agreements, the financial institution buys, on a non-recourse basis, the accounts receivable amounts related to our segment's customers at an agreed-upon discount rate.

The following table summarizes certain key details of each of the accounts receivable assignment agreements in place as of December 31, 2020:

Year Of Initial Agreement	Segment(s) Related To	Current Annual Interest Rate
2014	Mexico	LIBOR plus 0.75%
2018	Mexico	LIBOR plus 1.25%
2018	EMEA	EURIBOR plus 0.75%
2019	Asia and Mexico	LIBOR plus 1.00%
2019	Asia and Mexico	LIBOR plus 1.00%
2019	Asia	Fixed rate of 3.85%
2020	EMEA	EURIBOR plus 1.95%
2020	India	LIBOR plus 1.00%
2020	U.S.	LIBOR plus 1.25%

As the receivables are purchased by the financial institutions under the agreements noted above, the receivables are removed from our consolidated balance sheet. During the years ended December 31, 2020 and 2019, \$1,251.5 million and \$776.2 million, respectively, 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, 2020:

	Payments Due by Period					Total
	Less than 1 year	1-3 years	3-5 years	More than 5 years		
	(in thousands)					
Long-term debt obligations(1)	\$ 32,551	\$ 185,150	\$ 217	\$ —	\$ 217,918	
Operating lease obligations(2)	34,798	62,644	54,004	98,764	250,210	
Purchase obligations	2,568	2,465	714	—	5,747	
Estimated interest payments(3)	7,529	8,904	6	—	16,439	
Total contractual obligations	\$ 77,446	\$ 259,163	\$ 54,941	\$ 98,764	\$ 490,314	

(1) See “—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, Rhode Island, New Mexico, China, Mexico, Turkey, Denmark, Germany and India.

(3) Includes interest on variable rate debt based on interest rates as of December 31, 2020. See “—Our Indebtedness” above.

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. 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.

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. Because control transfers over time, revenue is recognized based on the extent of progress towards the completion of the performance obligation under the cost-to-cost input measure of progress as this method provides the best representation of the production progress towards satisfaction of the performance obligation. 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 performance obligation 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 judgments and estimates relating to the total consideration to be received and the expected direct costs to complete the performance obligation. 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.

Under the cost-to-cost method, contract assets established 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.

See Note 1 – Summary of Operations and Summary of Significant Accounting Policies – (c) Revenue Recognition of the Notes to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K, for further discussion of our accounting policies related to revenue recognition, including accounting policies surrounding our non-manufacturing related services.

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 the evaluation of our tax positions.

In the normal course of business, we establish valuation allowances for our deferred tax assets when the realization of the assets is not more likely than not. We intend to maintain such valuation allowances on our deferred tax assets until there is sufficient evidence to support the reversal of all or some portion of the allowances. Historically, we determined that a valuation allowance for all of our U.S. deferred tax assets was appropriate, however during the third quarter of 2018, we reversed a portion of the U.S. valuation allowance, based on the available evidence at that time. In 2019 a full valuation allowance was recorded in Taicang and India. Given our anticipated future earnings in India from becoming fully operational in 2020, we reversed the valuation allowance in that jurisdiction in 2020. The effect of a change in judgment concerning the realizability of deferred tax assets is included in our income tax provision.

As of December 31, 2020, we have U.S. federal net operating losses (NOLs) of approximately \$103.0 million, state NOLs of approximately \$253.2 million, foreign NOLs of approximately \$41.0 million and foreign tax credits of approximately \$1.9 million available to offset future taxable income in the U.S., China and India.

In December 2017, the Tax Cuts and Jobs Act (Tax Reform) was signed into law, 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, NOL deduction limitations, tax on global intangible low tax income (GILTI) earned by foreign corporate subsidiaries, the base erosion anti abuse tax (BEAT), and a deduction for foreign derived intangible income (FDII).

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, which was estimated at approximately \$0.1 million, primarily attributable to the reduction in the federal tax rate, was unchanged and we 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. is 21% and the tax rates in China, Mexico and Turkey are 25%, 30% and 22%, respectively. Our second Turkey facility is located in a tax-free zone and is not subject to income taxes on earnings recognized from its manufacturing activities.

Warranty Expense. 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. In 2020, we accrued additional warranty expenses of approximately \$12.9 million beyond the normal warranty expense describe above related to a remediation campaign for a specific wind blade model for one of our customers. We have not experienced any material warranty expenses beyond the provision described above in the years ended December 31, 2019 and 2018. However, changes in warranty reserves could have a material effect on our consolidated financial statements. For example, as of December 31, 2020, a change in the estimated warranty accrual rate of 1% across all products would change the warranty accrual by approximately \$42.5 million.

Recent Accounting Pronouncements

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

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.

Foreign Currency Risk. We conduct international operations in China, Mexico, Turkey and India. 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 \$46.2 million and \$10.9 million for the years ended December 31, 2020 and 2019, respectively.

Commodity Price Risk. We are subject to commodity price risk under agreements for the supply of our raw materials. We have not hedged 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 primary commodities for which we do not have fixed pricing. Approximately 40% of the resin and resin systems we use are purchased under contracts controlled by one of our customers and therefore they receive/bear 100% of any increase or decrease in resin costs further limiting our exposure to price fluctuations. Prior to taking into account any contractual obligations of our customers to share with us the cost savings or increases resulting from a change in the price of resin and resin systems, 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 \$10.1 million and \$9.3 million for the years ended December 31, 2020 and 2019, respectively. Under our customer supply agreements, our customers typically receive 70% of the cost savings or increases resulting from a change in the price of resin and resin systems.

In late 2019, worldwide demand for balsa wood increased as a result of shortages of other types of core materials. In addition, our supply chain for balsa wood, which is primarily sourced from Ecuador, has been further stressed due to the COVID-19 pandemic. As a result of this increased demand and supply chain disruption, we did have fixed pricing for a portion of our contracts and purchase orders for balsa wood for most of 2020. We believe that a 10% change in the price of balsa wood would have had an impact to income from operations of approximately \$8.0 million for the year ended December 31, 2020.

Interest Rate Risk. As of December 31, 2020, our Credit Agreement includes interest on the unhedged principal amount of \$96.2 million which is tied to LIBOR, and our EMEA segment has one general credit agreement outstanding which is tied to the Euro Interbank Offered Rate (EURIBOR). For a discussion of the interest rate swap arrangement we entered into related to our Credit Agreement, See Note 13 – Financial Instruments of the Notes to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K. The EMEA credit agreement had unsecured financing of \$11.2 million and financing of capital expenditures of \$4.3 million outstanding as of December 31, 2020. Our Credit Agreement and the one EMEA general credit agreement are the only variable rate debt agreements that we had outstanding as of December 31, 2020 as all remaining working capital loans, secured and unsecured financing and finance 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, 2020, 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, 2020 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, 2020.

Management's Report on Internal Control Over Financial Reporting

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, 2020. 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, 2020 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.

Our internal control over financial reporting as of December 31, 2020 has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report which is included herein.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting during the three months ended December 31, 2020, 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 – Information about our 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 2021 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2020.

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 2021 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2020.

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 2021 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2020.

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 2021 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2020.

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 2021 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the fiscal year ended December 31, 2020.

PART IV

Item 15. Exhibits and 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.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of TPI Composites, Inc. and subsidiaries (the Company) as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income (loss), changes in stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020 based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Adoption of New Accounting Pronouncement

As discussed in Note 1 to the consolidated financial statements, effective January 1, 2019, the Company changed its method of accounting for leases due to the adoption of Financial Accounting Standards Board Accounting Standard Codification Topic 842, *Leases*.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Item 9A, *Management's Report on Internal Control Over Financial Reporting*. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements 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. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included

performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Variable consideration and direct costs to complete performance obligations for wind blade sales

As discussed in Notes 1 and 2 to the consolidated financial statements, the Company generates the majority of its revenue from long-term contracts associated with manufacturing custom wind blades. Revenue from manufacturing wind blades is primarily recognized over time based on progress towards the completion of the performance obligation in the contract. Progress is determined by the ratio of direct costs incurred to date in fulfillment of the performance obligation to the total estimated direct costs required to complete the performance obligation. The Company recognizes variable consideration for wind blade sales that includes estimates of future contract volumes. Wind blade sales under long-term contracts was \$1,580,055 thousand compared to total net sales of \$1,670,137 thousand in fiscal 2020.

We identified the evaluation of estimates of future contract volumes and direct costs to complete performance obligations for wind blade sales as a critical audit matter. Evaluating these estimates required a high degree of auditor judgment as changes to the inputs can have a significant effect on the Company's revenue. Each wind blade contract contains variable consideration that includes estimates of future contract volumes. Each wind blade contract also requires a measure of progress that includes estimates of direct costs to complete the performance obligations.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's process to recognize revenue from wind blade sales. This included controls

related to estimates of future contract volumes and direct costs to complete the performance obligation. We read a selection of long-term customer contracts, and observed that terms, conditions, and key elements of the contracts were included in the Company's estimate of future contract volumes. We evaluated the Company's ability to estimate future contract volumes and direct costs to complete the performance obligations by comparing these estimates to historical results. We evaluated estimated future contract volumes by assessing (1) manufacturing plant capacity, (2) historical production volume, and (3) customer purchase commitments. We evaluated estimated direct costs to complete the performance obligations by examining the estimated amounts agreed upon with the customer and comparing them to historical costs. We compared the estimated future direct cost per blade to historical direct costs per blade and assessed the potential impact of future manufacturing efficiencies. Further, we evaluated historical direct labor cost by wind blade type and manufacturing plant, and analyzed jurisdiction-specific inflation rates based on publicly available data. We assessed current period revenue based upon the estimated consideration, the ratio of direct costs incurred to date in fulfillment of the performance obligations to the total estimated direct costs required to complete the performance obligations, and revenue recognized in previous periods for the performance obligations.

/s/ KPMG LLP

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

Phoenix, Arizona
February 25, 2021

TPI COMPOSITES, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2020	2019
	(In thousands, except par value data)	
Assets		
Current assets:		
Cash and cash equivalents	\$ 129,857	\$ 70,282
Restricted cash	339	992
Accounts receivable	132,768	184,012
Contract assets	216,928	166,515
Prepaid expenses	29,507	10,047
Other current assets	27,921	29,843
Inventories	10,839	6,731
Total current assets	548,159	468,422
Property, plant and equipment, net	209,001	205,007
Operating lease right of use assets	158,827	122,351
Goodwill	2,807	2,807
Intangible assets and deferred costs, net	4,146	4,170
Other noncurrent assets	33,317	23,920
Total assets	\$ 956,257	\$ 826,677
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable and accrued expenses	\$ 295,992	\$ 293,104
Accrued warranty	50,852	47,639
Current maturities of long-term debt	32,551	13,501
Current operating lease liabilities	26,099	16,629
Contract liabilities	614	3,008
Total current liabilities	406,108	373,881
Long-term debt, net of debt issuance costs and current maturities	184,316	127,888
Noncurrent operating lease liabilities	155,925	113,883
Other noncurrent liabilities	8,873	5,975
Total liabilities	755,222	621,627
Commitments and contingencies (Note 14)		
Stockholders' equity:		
Common shares, \$0.01 par value, 100,000 shares authorized and 36,771 shares issued and 36,564 shares outstanding at December 31, 2020; 100,000 shares authorized and 35,326 shares issued and 35,181 shares outstanding at December 31, 2019	368	353
Paid-in capital	349,472	322,906
Accumulated other comprehensive loss	(32,990)	(23,612)
Accumulated deficit	(109,716)	(90,689)
Treasury stock, at cost, 207 shares at December 31, 2020; 145 shares at December 31, 2019	(6,099)	(3,908)
Total stockholders' equity	201,035	205,050
Total liabilities and stockholders' equity	\$ 956,257	\$ 826,677

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2020	2019	2018
	(In thousands, except per share data)		
Net sales	\$ 1,670,137	\$ 1,436,500	\$ 1,029,624
Cost of sales	1,561,432	1,290,619	882,075
Startup and transition costs	44,606	68,033	74,708
Total cost of goods sold	1,606,038	1,358,652	956,783
Gross profit	64,099	77,848	72,841
General and administrative expenses	33,496	39,916	43,542
Loss on sale of assets and asset impairments	7,748	18,117	4,581
Restructuring charges, net	4,089	3,927	—
Income from operations	18,766	15,888	24,718
Other income (expense):			
Interest income	102	157	181
Interest expense	(10,501)	(8,179)	(10,417)
Loss on extinguishment of debt	—	—	(3,397)
Foreign currency loss, net	(19,986)	(4,107)	(13,489)
Miscellaneous income	3,876	3,648	4,650
Total other expense	(26,509)	(8,481)	(22,472)
Income (loss) before income taxes	(7,743)	7,407	2,246
Income tax benefit (provision)	(11,284)	(23,115)	3,033
Net income (loss)	\$ (19,027)	\$ (15,708)	\$ 5,279

Weighted-average common shares outstanding:			
Basic	35,532	35,062	34,311
Diluted	35,532	35,062	36,002

Net income (loss) per common share:			
Basic	\$ (0.54)	\$ (0.45)	\$ 0.15
Diluted	\$ (0.54)	\$ (0.45)	\$ 0.15

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

	Year Ended December 31,		
	2020	2019	2018
	(In thousands)		
Net income (loss)	\$ (19,027)	\$ (15,708)	\$ 5,279
Other comprehensive income (loss):			
Foreign currency translation adjustments	(8,099)	(7,026)	(14,428)
Unrealized gain (loss) on hedging derivatives, net of taxes of \$(200), \$(585) and \$158 for the years ended December 31, 2020, 2019 and 2018	(1,279)	(2,194)	594
Comprehensive loss	\$ (28,405)	\$ (24,928)	\$ (8,555)

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

	Common		Paid-in capital	Accumulated other comprehensive	Accumulated	Treasury stock, at cost	Total stockholders' equity
	Shares	Amount		loss	deficit		
	(In thousands)						
Balance at December 31, 2017	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	34,745	347	311,771	(14,392)	(74,981)	(1,788)	220,957
Net loss	—	—	—	—	(15,708)	—	(15,708)
Other comprehensive loss	—	—	—	(9,220)	—	—	(9,220)
Common stock repurchased	—	—	—	—	—	(2,120)	(2,120)
Issuances under share-based compensation plan	581	6	5,291	—	—	—	5,297
Share-based compensation expense	—	—	5,844	—	—	—	5,844
Balance at December 31, 2019	35,326	353	322,906	(23,612)	(90,689)	(3,908)	205,050
Net loss	—	—	—	—	(19,027)	—	(19,027)
Other comprehensive loss	—	—	—	(9,378)	—	—	(9,378)
Common stock repurchased	—	—	—	—	—	(2,191)	(2,191)
Issuances under share-based compensation plan	1,445	15	16,569	—	—	—	16,584
Share-based compensation expense	—	—	9,997	—	—	—	9,997
Balance at December 31, 2020	36,771	\$ 368	\$ 349,472	\$ (32,990)	\$ (109,716)	\$ (6,099)	\$ 201,035

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2020	2019	2018
	(In thousands)		
Cash flows from operating activities:			
Net income (loss)	\$ (19,027)	\$ (15,708)	\$ 5,279
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	49,667	38,580	26,429
Loss on sale of assets and asset impairments	7,748	18,117	4,581
Restructuring charges, net	4,089	3,927	—
Share-based compensation expense	10,352	5,681	7,795
Amortization of debt issuance costs	351	206	336
Loss on extinguishment of debt	—	—	3,397
Deferred income taxes	(7,982)	4,951	(14,912)
Changes in assets and liabilities:			
Accounts receivable	42,986	(19,366)	(59,200)
Contract assets and liabilities	(56,150)	(57,583)	(7,898)
Operating lease right of use assets and operating lease liabilities	15,036	6,953	—
Inventories	(4,276)	(1,145)	(1,685)
Prepaid expenses	(19,916)	(1,052)	1,318
Other current assets	1,491	(13,692)	(132)
Other noncurrent assets	734	(7,177)	(5,167)
Accounts payable and accrued expenses	6,209	80,720	32,263
Accrued warranty	3,213	10,874	6,346
Other noncurrent liabilities	3,045	2,798	(2,008)
Net cash provided by (used in) operating activities	37,570	57,084	(3,258)
Cash flows from investing activities:			
Purchases of property, plant and equipment	(65,666)	(74,408)	(52,688)
Acquisition of a business	—	(1,102)	—
Net cash used in investing activities	(65,666)	(75,510)	(52,688)
Cash flows from financing activities:			
Proceeds from revolving and term loans	80,000	22,000	89,435
Repayments of revolving and term loans	(21,260)	—	(74,972)
Net proceeds from (repayments of) accounts receivable financing	(3,805)	(10,719)	424
Proceeds from working capital loans	—	3,535	—
Repayments of working capital loans	—	(3,535)	—
Principal repayments of finance leases	(6,116)	(9,128)	—
Net proceeds from (repayments of) other debt	26,875	(4,286)	(23,763)
Debt issuance costs	(730)	—	(281)
Proceeds from exercise of stock options	15,839	5,223	4,284
Repurchase of common stock including shares withheld in lieu of income taxes	(2,191)	(2,120)	(2,859)
Net cash provided by (used in) financing activities	88,612	970	(7,732)
Impact of foreign exchange rates on cash, cash equivalents and restricted cash	(2,069)	(171)	617
Net change in cash, cash equivalents and restricted cash	58,447	(17,627)	(63,061)
Cash, cash equivalents and restricted cash, beginning of year	71,749	89,376	152,437
Cash, cash equivalents and restricted cash, end of year	\$ 130,196	\$ 71,749	\$ 89,376

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS – CONTINUED

	Year Ended December 31,			
	2020	2019		2018
	(in thousands)			
Supplemental cash flow information:				
Cash paid for interest	\$ 9,853	\$ 8,190	\$ 9,904	
Cash paid for income taxes, net of refunds	20,965	18,640	7,246	
Noncash investing and financing activities:				
Right of use assets obtained in exchange for new operating lease liabilities	61,455	15,855	—	
Property, plant, and equipment obtained in exchange for new finance lease liabilities	163	5,811	21,968	
Accrued capital expenditures in accounts payable	7,556	14,644	5,139	
Reconciliation of Cash, Cash Equivalents and Restricted Cash:				
	December 31,			
	2020	2019	2018	2017
Consolidated Balance Sheets				
	(in thousands)			
Cash and cash equivalents	\$ 129,857	\$ 70,282	\$ 85,346	\$ 148,113
Restricted cash	339	992	3,555	3,849
Restricted cash included within other noncurrent assets	—	475	475	475
Consolidated Statements Of Cash Flows				
Total cash, cash equivalents and restricted cash shown in the consolidated statements of cash flows	\$ 130,196	\$ 71,749	\$ 89,376	\$ 152,437

See accompanying notes to consolidated financial statements.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Note 1. Summary of Operations and Summary of 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; Warren, Rhode Island and Santa Teresa, New Mexico and international facilities in Dafeng, China; Taicang Port, China; Yangzhou, China, Juárez, Mexico; Matamoros, Mexico; Izmir, Turkey; Chennai, India, Kolding, Denmark and Berlin, Germany.

(b) Basis of Presentation

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. Certain prior period amounts in the consolidated financial statements and accompanying notes have been reclassified to conform to the current period's presentation.

(c) 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 performance obligation to the total estimated direct costs required to complete the performance obligation.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Determining the revenue to be recognized for services performed under our manufacturing contracts involves judgments and estimates relating to the total consideration to be received and the expected direct costs to complete the performance obligation. As such, revenue recognized reflects our estimates of future contract volumes and the direct 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. The total consideration also includes payments expected to be received associated with wind blade model transitions. 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 consideration 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 us to make concessions, such as in the form of liquidated damages, for missed production deadlines which are paid over a negotiated timeline.

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 consideration and costs to be incurred to complete the performance obligation. Based on this analysis, any changes in estimates of total consideration to be received and direct costs to complete the performance obligation 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 total consideration to be received.

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, when factoring in our accounts receivable assignment agreements, range from 5 to 25 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 wind blade sales.

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

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

(d) 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 satisfaction of the related performance obligations for which we have an enforceable right to payment upon termination and we may not use or sell the product to fulfill other customers' contracts. 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, as well as the allocated portion of costs incurred at our corporate headquarters and our research facilities. In addition, all depreciation associated with assets used in the production of our products is also included in cost of goods sold. Direct labor costs consist of salaries, benefits and other personnel related costs for employees engaged in the manufacturing of our products and services.

Startup and transition costs are primarily unallocated fixed overhead costs and underutilized direct labor costs incurred during the period production facilities are transitioning wind blade models and ramping up manufacturing. All direct labor costs are included in the measure of progress towards completion of the relevant performance obligation when determining revenue to be recognized during the period. 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, these costs as a percentage of net sales are 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

(e) General and Administrative Expenses

General and administrative expenses primarily relate to the unallocated portion of costs 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.

The unallocated research and development expenses incurred at our Warren, Rhode Island location as well as at our Kolding, Denmark advanced engineering center and our Berlin, Germany engineering center are also included in general and administrative expenses. For the years ended December 31, 2020, 2019 and 2018, total research and development expenses totaled \$1.0 million, \$1.0 million and \$0.8 million, respectively.

(f) Loss on Sale of Assets and Asset Impairments

For the years ended December 31, 2020, 2019 and 2018, the losses on the sale of certain receivables, on a non-recourse basis under supply chain financing arrangements with our customers, to financial institutions, the losses on the sale of other assets at our corporate and manufacturing facilities and asset impairment charges totaled \$7.7 million, \$18.1 million and \$4.6 million, respectively.

(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, 2020 and 2019, our China locations collectively had unrestricted cash totaling \$47.4 million and \$9.7 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, 2020 and 2019, we had provided for cash deposits for letters of guarantee used for customs clearance related to our China locations totaling \$0.3 million and \$1.0 million, respectively. These amounts are reported as restricted cash in our consolidated balance sheets.

As of December 31, 2019, 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. This balance was refunded to us in 2020. See Note 8, *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 creditworthiness 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 no receivables during 2020 or 2019, and \$0.2 million during 2018, and do not have any off-balance-sheet credit exposure related to our customers. See Note 4, *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 6, *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, Net

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, 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, impairment is recognized for the difference. We may first assess qualitative factors to determine whether it is necessary to perform the quantitative goodwill impairment test. We performed our annual goodwill impairment test during 2020 and determined that it is more-likely-than-not that its fair value exceeds its carrying amount.

Our patents, licenses, trademarks and development tools were acquired in business acquisitions 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.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

In addition, we recognize 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. See Note 7, *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 9, *Accrued Warranty*.

(n) Treasury Stock

Common stock purchased for treasury is recorded at historical cost. Transactions in treasury shares relate to shares withheld in lieu of income taxes associated with share-based compensation plans and are recorded at weighted-average cost.

(o) Foreign Currency Translation and Income and Losses

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. Translation adjustments are reported in accumulated other comprehensive loss in our consolidated balance sheets. Currency translation adjustments for the years ended December 31, 2020, 2019 and 2018 amounted to other comprehensive losses of \$8.1 million, \$7.0 million and \$14.4 million, respectively.

Our reporting currency is the U.S. dollar. However, we have non-U.S. operating subsidiaries in our U.S., Mexico, Turkey, China and India 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 their functional currency, the U.S. dollar.
- Our Mexico operations maintain their books and records through multiple legal entities that are denominated in the local Mexican currency, the Peso, which are remeasured to their U.S. dollar functional currency.
- Our Turkey operations maintain their books and records in their functional currency, the local Turkish currency, the Lira.
- Our China operations maintain their books and records in their functional currency, the local Chinese currency, the Renminbi.
- Our Chennai, India operations maintain their books and records in their functional currency, the U.S. dollar.
- Our Kolding, Denmark operation, which is a wholly-owned subsidiary of TPI Composites, Inc., maintains its books and records in their functional currency, the local Danish currency, the Krone.
- Our Berlin, Germany operation, which is a wholly-owned subsidiary of TPI Composites, Inc., maintains its books and records in their functional currency, the Euro.

Foreign currency transaction gains and losses are reported in foreign currency income (loss), net in our consolidated statements of operations.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

(p) Share-Based Compensation

We maintain one active incentive compensation plan: the Amended and Restated 2015 Stock Option and Incentive Plan (the 2015 Plan). The 2015 Plan provides for the issuance of incentive stock options, non-qualified stock options, stock appreciation rights, restricted stock units (RSUs), restricted stock awards, unrestricted stock awards, cash-based awards, performance-based restricted stock units (PSUs) 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.

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 PSUs granted. 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, 2020, we utilized a weighted-average volatility of 47.3%, a 0% dividend yield and a weighted-average risk-free interest rate of 0.5%. 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 our historical volatility and the 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 RSUs and PSUs are expensed over the vesting period using the straight-line method for our employees and our board of directors. The RSUs 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.

(q) Leases

On January 1, 2019, we adopted the Financial Accounting Standards Board (FASB) Accounting Standard Codification (ASC) Topic 842, *Leases*. We determine if an arrangement is a lease at inception. Operating leases are included in operating lease right of use (ROU) assets, current operating lease liabilities, and noncurrent operating

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lease liabilities in the consolidated balance sheets. Finance leases are included in property, plant and equipment, current maturities of long-term debt, and long-term debt, net of debt issuance costs and current maturities in the consolidated balance sheets.

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

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

(r) 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.

(s) 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, standalone selling prices and future contract volumes and the direct costs to complete the performance obligation for revenue recognition, fair value of stock options, performance-based restricted stock units and warrants, warranty reserves and other contingencies.

(t) 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.

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The carrying amounts of our 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 our short-term unsecured 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 our 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. Since our derivative assets and liabilities are not traded on an exchange, we value them using standard industry valuation models. As applicable, these models project future cash flows and discount the amounts to a present value using market-based observable inputs, including interest rate curves, credit risk, foreign exchange rates, and forward and spot prices for currencies. These inputs are observable in active markets over the contract term of the derivative instruments we hold, and accordingly, we classify the valuation techniques as Level 2.

(u) Recently Issued Accounting Pronouncements

Accounting Pronouncements Adopted in 2020

Financial Instruments

In June 2016, the FASB issued Accounting Standards Update (ASU) No. 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. The standard is intended to provide financial statement users with more decision-useful information about the expected credit losses on financial instruments and other commitments to extend credit held at each reporting date.

This standard was effective for all public business entities for annual and interim periods beginning after December 15, 2019, with early adoption permitted. We adopted this standard on January 1, 2020 and it did not have a material effect on our consolidated financial statements.

Fair Value Measurement

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

This standard was effective for all public business entities for annual and interim periods beginning after December 15, 2019, with early adoption permitted. We adopted this standard on January 1, 2020 and it did not have a material effect on our consolidated financial statements.

Income Taxes

In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*, which primarily removes specific exemptions to the general principles in Topic 740 in GAAP and improves the financial statement preparers' application of income tax-related guidance and simplifies GAAP.

We adopted this standard on January 1, 2020 and it did not have a material effect on our consolidated financial statements.

Recent Accounting Pronouncements

Reference Rate Reform

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*. These amendments provide optional guidance for a limited time to ease the potential burden in accounting for reference rate reform. This new guidance provides optional expedients and exceptions for applying GAAP to contracts, hedging relationships and other transactions affected by reference rate reform if certain criteria are met. These amendments apply only to contracts and hedging relationships that reference the London Interbank Offered Rate (LIBOR) or another reference rate expected to be discontinued due to reference rate reform. These amendments are effective immediately and may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022.

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In January 2021, the FASB issued ASU 2021-01, *Reference Rate Reform (Topic 848): Scope*. This ASU clarifies that certain optional expedients and exceptions in Topic 848 for contract modifications and hedge accounting apply to derivatives that are affected by the discounting transition. The ASU also amends the expedients and exceptions in Topic 848 to capture the incremental consequences of the scope clarification and to tailor the existing guidance to derivative instruments affected by the discounting transition.

An entity may elect to apply ASU 2021-01 on contract modifications that change the interest rate used for margining, discounting, or contract price alignment retrospectively as of any date from the beginning of the interim period that includes March 12, 2020, or prospectively to new modifications from any date within the interim period that includes or is subsequent to January 7, 2021, up to the date that financial statements are available to be issued.

An entity may elect to apply ASU 2021-01 to eligible hedging relationships existing as of the beginning of the interim period that includes March 12, 2020, and to new eligible hedging relationships entered into after the beginning of the interim period that includes March 12, 2020.

We are currently evaluating our contracts and the optional expedients provided by these new standards.

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, 2020						
	U.S.	Asia	Mexico	EMEA	India	Total
	(in thousands)					
Wind blade sales	\$ 135,415	\$ 511,090	\$ 472,994	\$ 368,907	\$ 91,649	\$ 1,580,055
Precision molding and assembly systems sales	—	13,134	14,939	—	—	28,073
Transportation sales	33,849	—	2,347	—	—	36,196
Other sales	12,677	2,859	5,559	4,638	80	25,813
Total net sales	\$ 181,941	\$ 527,083	\$ 495,839	\$ 373,545	\$ 91,729	\$ 1,670,137

Year Ended December 31, 2019						
	U.S.	Asia	Mexico	EMEA	India	Total
	(in thousands)					
Wind blade sales	\$ 120,125	\$ 366,206	\$ 410,337	\$ 431,362	\$ 687	\$ 1,328,717
Precision molding and assembly systems sales	3,774	25,203	19,703	—	—	48,680
Transportation sales	28,523	—	347	—	—	28,870
Other sales	16,895	2,400	5,219	5,719	—	30,233
Total net sales	\$ 169,317	\$ 393,809	\$ 435,606	\$ 437,081	\$ 687	\$ 1,436,500

Year Ended December 31, 2018						
	U.S.	Asia	Mexico	EMEA	India	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	\$ 163,716	\$ 306,255	\$ 268,756	\$ 290,897	\$ —	\$ 1,029,624

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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.

For a further information regarding of our reportable segments, refer to Note 19, *Segment Reporting*.

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 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. The majority of the contract asset balance relates to materials procured based on customer specifications. 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 primarily represent progress payments received as precision molding and assembly systems are 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 as of December 31 consisted of the following:

	2020	2019	\$ Change
	(in thousands)		
Gross contract assets	\$ 223,428	\$ 170,973	\$ 52,455
Less: reclassification from contract liabilities	(6,500)	(4,458)	(2,042)
Contract assets	\$ 216,928	\$ 166,515	\$ 50,413

	2020	2019	\$ Change
	(in thousands)		
Gross contract liabilities	\$ 7,114	\$ 7,466	\$ (352)
Less: reclassification to contract assets	(6,500)	(4,458)	(2,042)
Contract liabilities	\$ 614	\$ 3,008	\$ (2,394)

Contracts assets increased by \$50.4 million from December 31, 2019 to December 31, 2020 due to customer specific material purchases and incremental unbilled production during the year ended December 31, 2020. Contracts liabilities decreased by \$2.4 million from December 31, 2019 to December 31, 2020 due to the revenue earned related to precision molding and assembly systems and wind blades being produced exceeding the amounts billed to customers during the year ended December 31, 2020.

For the years ended December 31, 2020, 2019 and 2018, we recognized revenue of \$3.0 million, \$7.1 million and \$2.8 million, respectively, related to precision molding and assembly systems and wind blades, which was included in the corresponding contract liability balance at the beginning of the period.

Performance Obligations

Remaining performance obligations represent the transaction price for which work has not been performed and excludes any unexercised contract options. As discussed in Note 1, *Summary of Operations and Significant Accounting Policies – (c) Revenue Recognition*, the transaction price includes estimated variable consideration as determined based on the estimated production output within the range of the contractual guaranteed minimum volume obligations and production capacity.

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As of December 31, 2020, the aggregate amount of the transaction price allocated to the remaining performance obligations to be satisfied in future periods was approximately \$3.6 billion. We estimate that we will recognize the remaining performance obligations as revenue as follows:

	\$	% of Total
	(in thousands)	
Year Ending December 31,		
2021	\$ 1,689,153	47.1%
2022	1,203,476	33.5%
2023	622,170	17.3%
2024	75,841	2.1%
Total remaining performance obligations	\$ 3,590,640	100.0%

The transaction price allocated to the remaining performance obligations excludes approximately \$71.9 million of variable consideration over the contractual guaranteed minimum volume obligations under current contracts with customers which has been constrained primarily due to uncertainty associated with production volume during the remaining term of the agreements. We estimate the constraint will be resolved in subsequent periods when our customers provide additional information relevant to forecasted future production.

For the year ended December 31, 2020, net revenue recognized from our performance obligations satisfied in previous periods increased by \$23.7 million. The current year increase primarily relates to changes in certain of our estimated total contract values and related direct costs to complete the performance obligations.

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, 2020, the cost and accumulated amortization of such assets totaled \$6.6 million and \$3.7 million, respectively. As of December 31, 2019, the cost and accumulated amortization of such assets totaled \$5.6 million and \$2.7 million, respectively. These amounts are included in intangible assets and deferred costs, net in the consolidated balance sheet. See Note 7, *Intangible Assets and Deferred Costs, Net*.

In applying the practical expedient as permitted under FASB ASU 2014-09, *Revenue from Contracts with Customers (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 earned from a small number of customers. As such, our production levels are dependent on these customers' orders. See Note 18, *Concentration of Customers*.

The COVID-19 pandemic adversely affected our business and operations during the year ended December 31, 2020. During the first quarter of 2020, our China manufacturing facilities were adversely impacted by the COVID-19 pandemic in the form of reduced production levels and COVID-19 related costs associated with the health and safety of our associates and non-productive labor. During the second quarter of 2020, all of our manufacturing facilities with the exception of our China manufacturing facilities and our Rhode Island manufacturing facility were

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required to temporarily suspend production or operate at reduced production levels due primarily to certain applicable government-mandated stay at home orders in response to the COVID-19 pandemic, demands from certain of our labor unions to suspend or reduce production and general safety concerns of our associates. By the end of the second quarter of 2020, most of our manufacturing facilities had returned to operating at or near normal production levels. Although all of our manufacturing facilities currently are operating at or near normal production levels, we may be required to reinstate temporary production suspensions or volume reductions at our manufacturing facilities or at our other locations to the extent there is a resurgence of COVID-19 cases in the regions where we operate or there is an outbreak of positive COVID-19 cases in any of our facilities.

We maintain our U.S. cash in bank deposit and money market 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 2020 and 2019. U.S. money market accounts are not guaranteed by the FDIC. As of December 31, 2020 and 2019, we had \$68.9 million and \$45.8 million, respectively, of cash in bank deposit and money market 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. As of December 31, 2020, this included \$47.4 million in China, \$6.0 million in Turkey, \$5.0 million in India, \$2.1 million in Mexico and \$0.5 million in other countries. As of December 31, 2019, this included \$9.7 million in China, \$9.9 million in Turkey, \$2.4 million in India, \$2.1 million in Mexico and \$0.4 million in other countries. We have not experienced losses in these accounts. In addition, as of December 31, 2020 and 2019, we have short-term deposits in interest bearing accounts of \$0.3 million and \$1.0 million, respectively, in China, which are reported as restricted cash in our consolidated balance sheets. As of December 31, 2019, we had long-term deposits in interest bearing accounts of \$0.5 million in Iowa. This deposit was repaid to us in 2020. See Note 8, *Other Noncurrent Assets*.

Certain of our debt agreements are either tied to LIBOR or the Euro Interbank Offered Rate (EURIBOR) and certain of them have associated interest rate hedges. Due to the relatively low LIBOR and EURIBOR rates in effect as of December 31, 2020, 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.

Note 4. Accounts Receivable

Accounts receivable as of December 31 consisted of the following:

	2020	2019
	(in thousands)	
Trade accounts receivable	\$ 127,765	\$ 180,051
Other accounts receivable	5,003	3,961
Total accounts receivable	\$ 132,768	\$ 184,012

Note 5. Other Current Assets

Other current assets as of December 31 consisted of the following:

	2020	2019
	(in thousands)	
Refundable value-added tax	\$ 18,961	\$ 22,687
Deposits	2,791	6,143
Other current assets	6,169	1,013
Total current assets	\$ 27,921	\$ 29,843

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Note 6. Property, Plant and Equipment, Net

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

	2020	(in thousands)		2019
Machinery and equipment	\$ 204,917	\$		159,176
Buildings	15,544			14,495
Leasehold improvements	61,947			56,414
Office equipment and software	35,194			32,284
Furniture	25,097			22,429
Vehicles	635			562
Construction in progress	8,725			20,677
Total property, plant and equipment, gross	352,059			306,037
Accumulated depreciation	(143,058)			(101,030)
Total property, plant and equipment, net	\$ 209,001	\$		205,007

As of December 31, 2020, the projects in construction in progress included the continued investment in of our manufacturing facility in Chennai, India and in our other existing manufacturing facilities.

Total depreciation for the years ended December 31, 2020, 2019 and 2018 was \$48.6 million, \$36.7 million and \$25.5 million, respectively.

As of December 31, 2020, the cost and accumulated depreciation of property, plant and equipment that we are leasing under finance lease arrangements is \$28.5 million and \$12.5 million, respectively. As of December 31, 2019, the cost and accumulated depreciation of property, plant and equipment that we are leasing under finance lease arrangements is \$45.0 million and \$17.0 million, respectively. See Note 12, *Leases* for more information related to finance leases.

Note 7. Intangible Assets and Deferred Costs, Net

Carrying values and estimated useful lives of intangible assets and deferred costs as of December 31, 2020, consisted of the following:

	Estimated Useful Life	Cost	Accumulated Amortization	Net
			(in thousands)	
Pre-production investments (1)	Various	\$ 6,581	\$ (3,723)	\$ 2,858
Patents	10 years	123	(6)	117
Acquired development tools	10 years	1,075	(54)	1,021
Trademarks	Indefinite	150	—	150
Total intangible assets and deferred costs, net		\$ 7,929	\$ (3,783)	\$ 4,146

Carrying values and estimated useful lives of intangible assets and deferred costs as of December 31, 2019, consisted of the following:

	Estimated Useful Life	Cost	Accumulated Amortization	Net
			(in thousands)	
Pre-production investments (1)	Various	\$ 5,639	\$ (2,656)	\$ 2,983
Patents	10 years	112	(6)	106
Acquired development tools	10 years	980	(49)	931
Trademarks	Indefinite	150	—	150
Total intangible assets and deferred costs, net		\$ 6,881	\$ (2,711)	\$ 4,170

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

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During the years ended December 31, 2020, 2019 and 2018, we recorded amortization expense for the intangible assets and deferred costs of \$1.1 million, \$1.9 million and \$0.9 million, respectively.

Note 8. Other Noncurrent Assets

Other noncurrent assets as of December 31 consisted of the following:

	2020	2019
	(in thousands)	
Deferred tax assets	\$ 18,793	\$ 11,209
Deposits	10,004	8,437
Land use right (50 year estimated useful life)	1,584	1,521
Restricted cash	—	475
Other	2,936	2,278
Total other noncurrent assets	\$ 33,317	\$ 23,920

Note 9. Accrued Warranty

Warranty accrual as of December 31 consisted of the following:

	2020	2019	2018
	(in thousands)		
Warranty accrual at beginning of year	\$ 47,639	\$ 36,765	\$ 30,419
Accrual during the year	20,029	23,710	16,153
Cost of warranty services provided during the year	(29,890)	(6,220)	(4,457)
Changes in estimate for pre-existing warranties, including expirations during the period	13,074	(6,616)	(5,350)
Warranty accrual at end of year	\$ 50,852	\$ 47,639	\$ 36,765

Note 10. Share-Based Compensation

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

	2020	2019	2018
	(in thousands)		
Cost of goods sold	\$ 1,979	\$ 386	\$ 1,281
General and administrative expenses	8,373	5,295	6,514
Total share-based compensation expense	\$ 10,352	\$ 5,681	\$ 7,795

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

	2020	2019	2018
	(in thousands)		
RSUs	\$ 4,613	\$ 3,658	\$ 4,209
Stock options	3,589	1,501	2,463
PSUs	2,150	522	1,123
Total share-based compensation expense	\$ 10,352	\$ 5,681	\$ 7,795

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Included in total share-based compensation expense for the year ended December 31, 2020 is \$1.7 million of compensation expense associated with the modification of certain employee and non-employee awards during the period. The modifications primarily provided for the extension of the post termination exercise period of outstanding stock options, resulting in a one-time charge in the year ended December 31, 2020.

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	Units	Weighted-Average Grant Date Fair Value	Units	Weighted-Average Grant Date Fair Value
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	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	5,980,605	2,600,694	13.41	1,415,948	425,876	18.75	249,249	22.67
Increase in shares authorized	1,387,123	—	—	—	—	—	—	—
Granted	(875,557)	397,170	20.94	196,418	196,418	26.99	281,969	29.25
Exercised/vested	—	(345,475)	15.14	—	(236,187)	15.42	—	—
Forfeited/cancelled	129,341	(58,161)	15.23	—	(31,680)	24.91	(39,500)	25.60
Balance as of December 31, 2019	6,621,512	2,594,228	14.29	1,697,272	354,427	24.99	491,718	26.20
Increase in shares authorized	1,407,228	—	—	—	—	—	—	—
Granted	(1,044,491)	261,181	28.49	461,732	461,732	22.43	321,578	22.40
Exercised/vested	—	(1,195,405)	13.25	—	(117,683)	22.81	(131,924)	12.53
Forfeited/cancelled	221,289	(160,418)	20.40	—	(30,022)	25.06	(30,849)	26.89
Balance as of December 31, 2020	7,205,538	1,499,586	16.94	959,233	668,454	23.60	650,523	27.07

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The fair value of RSUs, based on the share price on the date of vesting, which vested during the years ended December 31, 2020, 2019 and 2018 was \$10.4 million, \$6.2 million and \$8.4 million, respectively. In addition, during 2020, 2019 and 2018, we repurchased 61,920 shares, 79,040 shares and 100,891 shares for \$2.2 million, \$2.1 million and \$2.9 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, 2020:

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
\$10.87	720,590	4.4	10.87	720,590	10.87
\$11.00 to \$17.06	137,822	5.2	16.40	130,740	16.36
\$18.70	8,797	5.5	18.70	8,797	18.70
\$18.77 to \$29.56	632,377	8.9	23.95	99,106	21.42
\$10.87 to \$29.56	1,499,586	6.4	16.94	959,233	12.78

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

	2020	2019	2018
	(in thousands)		
Total intrinsic value of stock options outstanding	\$ 53,741	\$ 12,219	\$ 29,045
Total intrinsic value of stock options exercisable	38,367	9,718	15,949
Cash received from the exercise of stock options	15,839	5,223	4,284
Fair value of stock options vested	4,669	8,796	4,566

As of December 31, 2020, the unamortized cost of the outstanding RSUs and PSUs was \$7.0 million and \$2.9 million, respectively, which we expect to recognize in the consolidated financial statements over weighted-average periods of approximately 1.9 years and 1.9 years, respectively. Additionally, the total unrecognized cost related to non-vested stock option awards was \$3.3 million, which we expect to recognize in the consolidated financial statements over a weighted-average period of approximately 1.9 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:

	2020	2019	2018
Weighted-average fair value	\$ 13.11	\$ 6.80	\$ 10.36
Expected volatility	48.5%	28.0%	42.8%
Expected life	6.1 years	6.3 years	6.3 years
Risk-free interest rate	0.4%	1.9%	2.7%
Dividend yield	0.0%	0.0%	0.0%

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Note 11. 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:

	2020	2019
	(in thousands)	
Senior revolving loan—US	\$ 171,154	\$ 112,414
Accounts receivable financing—EMEA	—	3,805
Unsecured financing—EMEA	30,040	—
Equipment financing—EMEA	4,335	7,903
Equipment finance lease—Mexico	8,038	11,919
Equipment finance lease—EMEA	4,119	5,637
Equipment finance lease—U.S.	132	288
Equipment finance lease—India	100	95
Total debt - principal	217,918	142,061
Less: Debt issuance costs	(1,051)	(672)
Total debt, net of debt issuance costs	216,867	141,389
Less: Current maturities of long-term debt	(32,551)	(13,501)
Long-term debt, net of debt issuance costs and current maturities	\$ 184,316	\$ 127,888

Senior Revolving Loan (U.S.):

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 our previous credit agreement, various fees and expenses and accrued interest. All borrowings and amounts outstanding under the Credit Agreement are scheduled to mature in April 2023.

In 2018, interest accrued at a variable rate equal to LIBOR plus a 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. See Note 13, *Financial Instruments*, for more details on this interest rate swap arrangement.

In May 2019, the Credit Agreement was amended to revise the definition of Consolidated EBITDA as utilized in certain of the financial covenants of the Credit Agreement. In February 2020, we entered into an Incremental Facility Agreement with the current lenders to our Credit Agreement and an additional lender, pursuant to which the aggregate principal amount of our revolving credit facility under the Credit Agreement was increased from \$150.0 million to \$205.0 million. All other material terms and conditions of the Credit Agreement remained the same. In connection with this Incremental Facility Agreement, we incurred additional debt issuance costs totaling \$0.2 million which will be amortized to interest expense over the remaining term of the Credit Agreement using the effective interest method.

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In June 2020, we entered into an amendment to our Credit Agreement which made certain adjustments to one of the financial covenants, added new covenants related to minimum liquidity and mandatory repayment triggers, provided for certain modifications to the affirmative and negative covenants and changed the interest rate during the Adjustment Period (as defined in the Credit Agreement) to a LIBOR floor of 0.75% plus a margin of 3.0% per annum (3.75% as of December 31, 2020). The interest rate following the end of the Adjustment Period would be equal to a LIBOR floor of 0.75% plus a margin ranging between 1.75% to 2.50% per annum. All other material terms and conditions of the Credit Agreement remained the same.

As of December 31, 2020 and 2019, there was \$171.2 million and \$112.4 million outstanding under the Credit Agreement, respectively. Additionally, as of December 31, 2020 and 2019, there was \$7.9 million and \$5.1 million of letters of credit outstanding under the letter of credit sub-facility of the Credit Agreement, respectively.

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

Accounts Receivable, Secured and Unsecured Financing:

EMEA: In general, all of the credit agreements which the EMEA segment enters into have provisions which allow them to borrow in either U.S. dollars, Turkish Lira or Euro, regardless of the currency in which the agreement is denominated. In addition, none of the credit agreements have an expiration date, however each credit agreements' limits are reviewed annually to establish available capacity, and every time we draw under one of the credit agreements a term is set for its repayment.

During 2014, we renewed a general credit agreement, as amended, with a Turkish financial institution to provide up to \$23.2 million of financing, which includes \$21.0 million of unsecured financing and \$2.2 million of letters of credit. Interest on the unsecured financing accrues at a fixed rate of 3.5% and is payable at the end of the term when the loan is repaid. Interest on the letters of credit accrues at fixed rates of between 0.45% and 6.95% and is payable quarterly until the letter of credit is closed. As of December 31, 2020 and 2019, there were no amounts outstanding under the unsecured financing facility. As of December 31, 2020, there was approximately 12.5 million Turkish Lira (approximately \$1.7 million) and 0.4 million Euro (approximately \$0.5 million) of letters of credit outstanding under the letter of credit facility. As of December 31, 2019, there were approximately 7.6 million Turkish Lira (approximately \$1.0 million) of letters of credit outstanding under the letter of credit facility.

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 \$38.1 million as of December 31, 2020) of financing, of which 20.0 million Euro (approximately \$24.6 million as of December 31, 2020) includes amounts related to our previous financing of capital expenditures facility and an unsecured revolving credit facility and 11.0 million Euro (approximately \$13.5 million as of December 31, 2020) relates to unsecured financing, letters of credit and other non-cash items. Interest on the portion of the 20.0 million Euro facility related to financing of capital expenditures was determined based upon the term of the loan utilizing the one-month EURIBOR plus 6.75% (6.75% as of December 31, 2020 and is payable monthly. The maturity date for amounts currently outstanding under the 20.0 million Euro facility is December 2021. Interest on the portion of the 11.0 million Euro facility related to unsecured financing was determined based upon the term of the loan utilizing the one-month EURIBOR plus 1.5% (1.5% as of December 31, 2020) and was fully paid on the origination date. Interest on the portion of the 11.0 million Euro facility related to letters of credit accrues at fixed rates of between 0.5% and 2.0%, and is payable quarterly until the letter of credit is closed. The maturity date for amounts currently outstanding under the 11.0 million Euro facility is April 2021. As of December 31, 2020, there was approximately 9.1 million Euro (approximately \$11.2 million) outstanding under the 11.0 million Euro facility, specifically related to unsecured financing, with no corresponding amount outstanding as of December 31, 2019. In addition, as of December 31, 2020 and 2019, there was approximately 3.5 million Euro (approximately \$4.3 million) and approximately 7.1 million Euro (approximately \$7.9 million), respectively, outstanding under the 20.0 million Euro facility, specifically related to financing of capital expenditures. Additionally, as of December 31, 2020, there was approximately 1.1 million Turkish Lira (approximately \$0.2 million) and 0.25 million Euro (approximately \$0.3 million) of letters of credit outstanding under the 11.0 million Euro facility. As of December 31, 2019, there was approximately 0.6 million Turkish Lira (approximately \$0.1 million) and 0.25 million Euro (approximately \$0.3 million) of letters of credit outstanding under the 11.0 million Euro facility. In 2020, the former facility related to the collateralized financing based on

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invoiced accounts receivables of one of our customers in Turkey was cancelled. The \$3.8 million balance outstanding under this facility as of December 31, 2019 was repaid in 2020.

In the fourth quarter of 2018, we entered into a credit agreement, as amended, with a Turkish financial institution to provide up to 65.0 million Turkish Lira (approximately \$8.9 million as of December 31, 2020) of financing, of which 50.0 million Turkish Lira (approximately \$6.8 million as of December 31, 2020) relates to unsecured financing and 15.0 million Turkish Lira (approximately \$2.1 million as of December 31, 2020) relates to letters of credit and other non-cash items. Interest on the unsecured financing accrues at a fixed rate of 2.0% and is payable at the end of the term when the loan is repaid. Interest on the letters of credit and other non-cash items accrues at a fixed rate of 1.5 % and is paid quarterly. As of December 31, 2020 and 2019, there were no amounts of unsecured financing outstanding under this agreement. As of December 31, 2020 and 2019, there was 0.35 million Euro (approximately \$0.4 million) of letters of credit outstanding in both periods under this agreement.

In the fourth quarter of 2019, we entered into a credit agreement with a Turkish financial institution, as amended, to provide up to 125.0 million Turkish Lira (approximately \$17.0 million as of December 31, 2020), of which up to 100.0 million Turkish Lira (approximately \$13.6 million as of December 31, 2020) relates to unsecured financing and 25.0 million Turkish Lira (approximately \$3.4 million as of December 31, 2020) relates to letters of credit and other non-cash items. Interest on the unsecured financing accrues at a fixed rate of 2.15% and is payable at the end of the term of the loan when the loan is repaid. Interest on the letters of credit and other non-cash items accrues at a fixed rate of 0.5% and is paid quarterly. As of December 31, 2020, there was approximately 4.0 million Euro (approximately \$4.9 million) of unsecured financing outstanding under this agreement. In addition, as of December 31, 2020, there was approximately 1.6 million Turkish Lira (approximately \$0.2 million) of letters of credit outstanding under this facility. As of December 31, 2019, there were no amounts outstanding under this agreement.

In the first quarter of 2020, we entered into a credit agreement, as amended, with a Turkish financial institution to provide up to \$18.0 million of unsecured financing, letters of credit and other non-cash items. Interest on the unsecured financing accrues at a fixed rate of 2.4% and is payable quarterly. Interest on the letters of credit and other non-cash items accrues at a fixed rate of 0.35% and is paid quarterly. The maturity date for amounts currently outstanding is March 2023. As of December 31, 2020, there was \$13.9 million of unsecured financing outstanding and \$0.1 million of letters of credit outstanding under this credit agreement.

In the first quarter of 2020, we entered into a credit agreement with a Turkish financial institution to provide up to 5.0 million Euro (approximately \$6.1 million as of December 31, 2020) of unsecured financing. Interest accrues at a fixed rate of 7.0% and is payable at the end of the term when the loan is repaid. As of December 31, 2020, there were no amounts outstanding under this credit agreement.

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

Asia: In August 2019, we entered into a credit agreement, as amended, with a Chinese financial institution to provide an unsecured credit line of up to 90.0 million Renminbi (approximately \$13.8 million as of December 31, 2020) related to two of our China facilities which can be used for the purpose of working capital, issuing customs letters of guarantee and covering the related deposits on such letters of guarantee, and certain other transactions approved by the lender. Interest on the credit line accrues at the Chinese central bank interest rate plus an applicable margin (4.4% as of December 31, 2020) and can be paid monthly, quarterly or at the time of the debt's maturity (August 2021). As of December 31, 2020, there were no amounts outstanding under this credit agreement. As of December 31, 2019, there were 25.7 million Renminbi (approximately \$3.7 million) of letters of guarantee and related deposits used for customs clearance outstanding under this credit agreement.

In March 2018, we entered into a credit agreement, as amended, with a Chinese financial institution to provide an unsecured credit line of up to 100.0 million Renminbi (approximately \$15.3 million as of December 31, 2020) which can be used for the purpose of issuing customs letters of guarantee and working capital. Interest on the credit line accrues at the Chinese central bank interest rate plus an applicable margin (4.4% as of December 31, 2020) and can be paid monthly, quarterly or at the time of the debt's maturity (in March 2023). As of December 31, 2020, there were 40.5 million Renminbi (approximately \$6.2 million) of letters of guarantee used for customs clearance outstanding under this credit agreement. As of December 31, 2019, there were 71.9 million Renminbi (approximately \$10.3 million) of letters of guarantee used for customs clearance outstanding under this credit agreement.

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Equipment Leases and Other Arrangements:

Mexico: 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, 2020 and 2019 was \$7.1 million and \$10.9 million, respectively.

EMEA: 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, and subsequent amendments, the loan is to be repaid in monthly installments through 2023 at an effective interest rate of 8.0%. All other financing agreement terms remained the same. The balance outstanding as of December 31, 2020 and 2019 was \$3.5 million and \$5.6 million, respectively.

The average interest rate on our short-term borrowings as of December 31, 2020 and 2019 was approximately 3.3% and 5.7%, respectively.

The future aggregate annual principal maturities of debt as of December 31, 2020 are as follows:

	(in thousands)
Year Ending December 31,	
2021	\$ 32,551
2022	13,271
2023	171,879
2024	213
2025	4
Total debt - principal	\$ 217,918

Note 12. Leases

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

The components of lease cost for the years ended December 31 were as follows:

	2020	2019
	(in thousands)	
Total operating lease cost	\$ 36,958	\$ 30,957
Finance lease cost		
Amortization of assets under finance leases	\$ 5,973	\$ 6,351
Interest on finance leases	985	1,414
Total finance lease cost	\$ 6,958	\$ 7,765

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Total lease liabilities as of December 31 were as follows:

	2020		2019	
	Operating Leases	Finance Leases	Operating Leases	Finance Leases
	(in thousands)			
Current operating lease liabilities	\$ 26,099	\$ —	\$ 16,629	\$ —
Current maturities of long-term debt	—	6,018	—	5,744
Noncurrent operating lease liabilities	155,925	—	113,883	—
Long-term debt, net of debt issuance costs and current maturities	—	6,371	—	12,194
Total lease liabilities	\$ 182,024	\$ 12,389	\$ 130,512	\$ 17,938

The future minimum lease payments under noncancelable leases as of December 31, 2020 were as follows:

Year Ending December 31,	Operating Leases	Finance Leases
	(in thousands)	
2021	\$ 34,798	\$ 6,319
2022	32,245	5,859
2023	30,399	891
2024	27,060	225
2025	26,944	7
Thereafter	98,764	—
Total future minimum lease payments	250,210	13,301
Less: interest	(68,186)	(912)
Total lease liabilities	\$ 182,024	\$ 12,389

See Note 6, *Property, Plant and Equipment, Net* for a discussion of the cost and accumulated depreciation of assets financed through finance leases.

Supplemental cash flow information related to leases for the years ended December 31 was as follows:

	2020	2019
	(in thousands)	
Supplemental Cash Flow Information:		
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	\$ 31,478	\$ 29,845
Operating cash flows from finance leases	985	1,414
Financing cash flows from finance leases	6,116	9,128
Right of use assets obtained in exchange for new lease obligations:		
Operating leases	61,455	15,855
Finance leases	163	5,811

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Other information related to leases as of December 31 was as follows:

	2020	2019
Weighted-Average Remaining Lease Term (In Years):		
Operating leases	7.7	7.6
Finance leases	2.2	3.2
Weighted-Average Discount Rate:		
Operating leases	7.9%	7.5%
Finance leases	6.4%	6.4%

As of December 31, 2020, there were no additional leases related to our manufacturing facilities, warehouses, offices, automobiles or our machinery and equipment which have not yet commenced.

Note 13. Financial Instruments

Interest Rate Swap

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

To offset the variability of future interest payments on the Credit Agreement arising from changes in 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 FASB ASC Topic 815, *Derivatives and Hedging*, and we designated it as such.

Foreign Exchange Forward Contracts

We use foreign exchange forward contracts to mitigate our exposure to fluctuations in exchange rates between the functional currencies of our subsidiaries and the other currencies in which they transact. We do not use such forward contracts for speculative or trading purposes.

Mexican Peso

In September 2019, we entered into the first of these foreign exchange forward contracts. We expect certain of our subsidiaries to have future cash flows that will be denominated in currencies other than the subsidiaries' functional currencies. Changes in the exchange rates between the functional currencies of our subsidiaries and the other currencies in which they transact will cause fluctuations in the cash flows we expect to receive or pay when these cash flows are realized or settled. Accordingly, we enter into foreign exchange forward contracts to hedge a portion of these forecasted cash flows. As of December 31, 2020, these foreign exchange forward contracts hedged our forecasted cash flows for a three-month period. These foreign exchange forward contracts qualified for accounting as cash flow hedges in accordance with ASC Topic 815, and we designated them as such.

In October 2020, we purchased a series of call option contracts to further mitigate cash flow variability associated with the forecasted expenses against changes in exchange rates. A premium of \$0.7 million was paid in a single transaction at hedge initiation and recorded within other current assets on our consolidated balance sheet. The premium is amortized against our earnings on a straight-line basis over the period of nine months, the period in which we had executed call option contracts, through cost of sales within our consolidated statements of operations. These foreign exchange call option contracts qualified for accounting as cash flow hedges in accordance with ASC Topic 815, and we designated them as such.

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Chinese Renminbi

In October 2020, we entered into our first monthly forward contract to hedge our exposure to exchange rate fluctuations on certain balance sheet amounts recorded on our Chinese entities that are not the entities' functional currency. In executing this hedge strategy, as a result of our organizational structure, we also entered into certain foreign currency forward contracts to hedge the exposure to a portion of our net investments in certain non-U.S. subsidiaries against the effect of exchange rate fluctuations on the translation of foreign currency balances to the U.S. dollar. For the derivative instruments that are designated and qualify as net investment hedges, gains and losses are reported in other comprehensive income (loss) where they offset gains and losses recorded on our net investments in our non-U.S. subsidiaries. These contracts are entered into and settled monthly. These hedges are determined to be effective. Hedge accounting was not elected on the balance sheet hedge and as a result, all gains and losses on these contracts are recorded through foreign currency loss, net on our consolidated statement of operations. For the year ended December 31, 2020, \$1.8 million in gains on the balance sheet hedge were realized.

Intercompany Debt

In August 2018, we provided a Turkish Lira denominated intercompany loan to an EMEA 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 ASC Topic 815, and we designated it as such. The forward contract was settled in October 2018.

All of our derivative assets and liabilities measured at fair value are classified as Level 2 within the fair value hierarchy. For a detailed discussion of the fair value hierarchy, refer to the discussion in Note 1, *Summary of Operations and Summary of Significant Accounting Policies – Fair Value of Financial Instruments*.

As of December 31, 2020, the notional values associated with our foreign exchange forward contracts qualifying as cash flow hedges were approximately 0.3 billion Mexican Peso (approximately \$14.0 million). As of December 31, 2019, the notional values associated with our foreign exchange forward contracts qualifying as cash flow hedges were approximately 1.1 billion Mexican Peso (approximately \$54.8 million). As of December 31, 2020, the notional values associated with our foreign exchange call option contracts qualifying as cash flow hedges were approximately 0.4 billion Mexican Peso (approximately \$17.3 million).

The fair values and location of financial instruments in our consolidated balance sheets as of December 31, were as follows:

Financial Instrument	Consolidated Balance Sheet Line Item	2020	2019
		(in thousands)	
Foreign exchange forward contracts	Other current assets	\$ 5,832	\$ 820
Foreign exchange forward contracts	Accounts payable and accrued expenses	2,096	124
Interest rate swap	Other noncurrent liabilities	4,414	2,723

For cash flow hedges, the gain or loss is reported as a component of accumulated other comprehensive loss in our consolidated statements of changes in stockholders' equity and reclassified into earnings in our consolidated statements of operations in the same period or periods during which the hedged transaction affects earnings. The net income (loss) recognized in accumulated other comprehensive loss in our consolidated statements of changes in stockholders' equity for our foreign exchange forward contracts is expected to be recognized in cost of sales in our consolidated statements of operations during the next six months. The gain or loss on our interest rate swap is recorded in accumulated other comprehensive loss and subsequently reclassified into interest expense in our consolidated statements of operations in the period in which the hedged transaction affects earnings. As of

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December 31, 2020, no interest rate swaps originally designated for hedge accounting were de-designated or terminated. No ineffectiveness on our interest rate swaps was recognized as of December 31, 2020, and none is anticipated over the term of the agreement.

The following table presents the pretax amounts reclassified from accumulated other comprehensive loss into our consolidated statements of operations:

Comprehensive Income (Loss) Component	Consolidated Statement of Operations Line Item	2020	2019	2018
(in thousands)				
Foreign exchange forward contracts	Cost of sales	\$ 996	\$ —	\$ —

Note 14. 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.

Rental expense charged under all operating leases (including leases with terms of less than one year) was \$37.0 million, \$31.0 million and \$25.5 million for the years ended December 31, 2020, 2019 and 2018, respectively. See Note 12, *Leases* for a listing of the future minimum lease payments under noncancelable operating leases with terms of one year or more as of December 31, 2020.

(b) Legal Proceedings

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

In January 2021, we received a complaint that was filed by the administrator for the Senvion GmbH (Senvion) insolvency estate in German insolvency court. The complaint asserts avoidance against us in the aggregate amount of \$13.3 million. The alleged avoidance claims relate to payments that Senvion made to us for wind blades that we produced prior to Senvion filing for insolvency protection. We plan to file a response to these alleged avoidance claims in the coming months and we believe we have meritorious defenses to the alleged avoidance claims. Due to the early stage of this claim, we have determined that the ultimate outcome cannot be estimated at this time.

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.

(c) 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.

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(d) Dividend Restrictions

Certain of our subsidiaries are limited in their ability to declare dividends without first meeting statutory restrictions of China, including retained earnings as determined under Chinese-statutory accounting requirements. Until 50% (\$26.6 million) of registered capital is contributed to a surplus reserve, our China 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 China operations can pay dividends equal to 100% of after-tax profit assuming other conditions are met. As of December 31, 2020, the amount of the surplus reserve fund was \$7.0 million.

(e) 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 2019, the collective bargaining agreement with the Turkey facilities was renewed through 2020 and we are in the process of negotiating an amendment for calendar year 2021. In March 2018, we entered into a collective bargaining agreement with a labor union for certain of our employees at the Matamoros, Mexico facility. We recently amended our Matamoros collective bargaining agreement to adjust the salaries and bonuses payable to our associates for calendar year 2021 that are covered by this agreement. Currently, there are no other employees covered by collective bargaining agreements. We believe that our relations with employees are generally good.

(f) Escheat Audit

In November 2020, we were notified by the state of Delaware that they intend to examine our books and records to determine compliance with Delaware escheat laws. Since that date, additional states have joined with Delaware in the audit process and additional states may join in the audit process. The audit is conducted by an outside firm on behalf of the states and covers the period from 2005 to 2019. We believe that the audits may take several years to complete. Due to the preliminary stage of this audit, we have determined that the ultimate outcome cannot be reasonably estimated at this time. Any claims or liabilities resulting from these audits could have a material impact on our financial condition, results of operations and cash flows.

Note 15. Income Taxes

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

	2020	2019	2018
	(in thousands)		
United States	\$ 4,913	\$ (41,255)	\$ (33,034)
China	16,232	(3,777)	(4)
Turkey	(26,566)	47,579	31,955
Mexico	8,509	8,434	3,329
India	(13,810)	(3,970)	—
Other	2,979	396	—
Total income (loss) before income taxes	\$ (7,743)	\$ 7,407	\$ 2,246

Tax Reform

As of December 31, 2018, we completed the accounting for the enactment-date income tax effects of the Tax Cuts and Jobs Act (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.

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Tax Reform enacted a new minimum tax on U.S. companies' foreign operations called global intangible low tax income (GILTI). Beginning in 2018, 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.

The Internal Revenue Service published final regulations in July 2020 to address the application of the high-tax exclusion from GILTI under the Tax Reform allowing us to make an annual election to exclude GILTI of our foreign subsidiaries with an effective tax rate greater than 90% of the U.S. corporate rate. We recognized \$10.6 million of tax benefits related to current and prior years as a result of this change in legislation.

We do not provide deferred taxes related to U.S. GAAP basis in excess of outside tax basis in the investment in our foreign subsidiaries to the extent such amounts relate to indefinitely reinvested earnings and profits of such foreign subsidiaries. As of December 31, 2020, our undistributed earnings of certain of our foreign subsidiaries amounted to approximately \$95.2 million, and we consider those earnings reinvested indefinitely.

The income tax provision includes U.S. federal, state, and local taxes, Turkey, China, Mexico and India 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 (benefit) for the years ended December 31 are as follows:

	2020	2019	2018
	(in thousands)		
Current:			
U.S. federal	\$ —	\$ —	\$ —
U.S. state and local taxes	32	(7)	4
Foreign	19,234	18,171	11,875
Total current	19,266	18,164	11,879
Deferred:			
U.S. federal	(1,909)	6,277	(7,596)
U.S. state and local taxes	(1,385)	(950)	(36)
Foreign	(4,688)	(376)	(7,280)
Total deferred	(7,982)	4,951	(14,912)
Total income tax provision (benefit)	\$ 11,284	\$ 23,115	\$ (3,033)

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:

	2020	2019	2018
United States statutory income tax rate	21.0%	21.0%	21.0%
Foreign rate differential	(189.1)	(40.8)	(14.4)
Foreign permanent differences	(19.4)	2.9	31.7
Tax rate change	(6.9)	(0.3)	—
Withholding taxes	(20.1)	24.5	27.3
Subpart F / GILTI income	137.6	212.3	539.8
Unrecognized tax benefits	(91.6)	—	—
Share-based compensation	3.5	(9.1)	(89.0)
Valuation allowance	0.7	115.5	(483.1)
State taxes	13.7	(10.2)	(1.7)
Deferred tax adjustments	11.8	2.1	4.6
Research and development	11.2	(13.4)	(59.8)
Foreign currency / inflationary adjustments	5.6	(0.5)	(90.6)
Other	(23.7)	8.1	(20.8)
Effective income tax rate	(145.7)%	312.1%	(135.0)%

TPI COMPOSITES, INC. AND SUBSIDIARIES

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

	2020	2019	2018
	(in thousands)		
Deferred tax assets:			
Net operating loss and credit carry forwards	\$ 36,754	\$ 23,065	\$ 17,360
Deferred revenue	180	1,792	149
Non-deductible accruals	12,360	16,111	10,850
Equity compensation	3,298	3,274	3,607
Lease liabilities	23,271	1,062	—
Non-deductible interest	3,302	—	1,452
Tax credits	1,931	1,931	2,212
Other	6,760	4,480	4,548
Gross deferred tax assets	87,856	51,715	40,178
Valuation allowance	(18,903)	(18,505)	(8,520)
Total deferred tax assets	68,953	33,210	31,658
Deferred tax liabilities:			
Deferred revenue	(24,294)	(17,081)	(13,781)
Depreciation	(3,446)	(4,196)	(2,636)
Lease assets	(22,453)	(32)	—
Other	33	(827)	(406)
Total deferred tax liabilities	(50,160)	(22,136)	(16,823)
Net deferred tax assets	\$ 18,793	\$ 11,074	\$ 14,835

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

	2020	2019	2018
	(in thousands)		
Valuation allowance at beginning of year	\$ (18,505)	\$ (8,520)	\$ (18,680)
Benefits obtained (costs accumulated)	(398)	(9,985)	10,160
Valuation allowance at end of year	\$ (18,903)	\$ (18,505)	\$ (8,520)

The valuation allowance as of December 31, 2020 primarily relates to certain state and foreign 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. During 2019, we increased the valuation allowance recorded against deferred tax assets in Taicang, China and India. The increase of this valuation allowance resulted in tax expense of \$8.5 million for the year. During 2020, we recognized \$0.6 million tax benefits from the release of valuation allowance against deferred tax assets in India and changes to realizability of certain attributes in the U.S.

As of December 31, 2020, we have U.S. federal and state NOL carryforwards of \$103.0 million and \$253.2 million, respectively, with foreign NOL carryforwards of approximately \$41.0 million and foreign tax credits of approximately \$1.9 million available to offset future U.S., China and India taxable income. The U.S. federal and state NOL carryforwards expire in varying amounts through 2039 and the foreign tax credits expire in 2026. We also have foreign NOL carryforwards that expire in varying amounts through 2028 and some U.S. federal and foreign NOL carryforwards with indefinite lives. The utilization of our NOLs is also subject to an annual limitation under Section 382 of the Internal Revenue Code due to changes in ownership. Based on our analysis, we do not believe such limitation will impact our realization of the NOL carryforwards as we anticipate utilizing them prior to expiration.

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We recognize the impact of a tax position in the 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 include the reserves recorded for uncertain tax positions on filed tax returns and the unrecognized portion of affirmative claims. Included in the balance of unrecognized tax benefits as of December 31, 2020 are \$7.0 million, of tax benefits that, if recognized, would reduce our annual effective rate. We do not anticipate any decreases to unrecognized tax benefits in the coming year. Our policy is to recognize any interest and penalties that we may incur related to our tax positions as a component of our income tax provision or benefit. We did not accrue any penalties or interest during 2020 related to the unrecognized tax benefit noted above. We did not record any uncertain tax positions in 2019 or 2018.

The following is a reconciliation of the beginning and ending amount of total unrecognized tax benefits for the years ended December 31:

	2020	2019	2018
	(in thousands)		
Unrecognized tax benefits at beginning of year	\$ —	\$ —	\$ —
Increases related to prior year tax positions	5,220	—	—
Decreases related to prior year tax positions	—	—	—
Increases related to current year tax positions	2,268	—	—
Increases (decreases) due to currency translation	—	—	—
Decreases relating to settlements with authorities	(496)	—	—
Decreases from laps in statute of limitations	—	—	—
Unrecognized tax benefits at end of year	\$ 6,992	\$ —	\$ —

We operate in and file income tax returns in various jurisdictions in China, Mexico, Turkey, India, U.S., Denmark, Germany, Spain and Switzerland, which are subject to examination by tax authorities. In the U.S., the federal tax returns for 2017 through 2019 remain open to examination. For U.S. state and local taxes as well as in non-U.S. jurisdictions, the statute of limitations generally varies between three and ten years. However, to the extent allowable by law, the tax authorities may have a right to examine and make adjustment to prior periods when amended returns have been filed, or when NOLs or tax credits were generated and carried forward for subsequent utilization.

Note 16. Net Income (Loss) Per Common Share

Basic net income (loss) per common share is computed by dividing the net income (loss) by the weighted-average number of common shares outstanding during a period. Diluted net income per common share is computed by giving effect to all potentially dilutive securities, unless there is a net loss for the period and/or performance-based awards which are not included until performance conditions are met. In computing diluted net income per common share, we use 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 net income (loss) per common share for the years ended December 31:

	2020	2019	2018
	(in thousands)		
Basic weighted-average shares outstanding	35,532	35,062	34,311
Effect of dilutive awards	—	—	1,691
Diluted weighted-average shares outstanding	35,532	35,062	36,002

Since there were net losses for the years ended December 31, 2020 and 2019, approximately 1,674,000 and 1,176,000 potentially dilutive shares, respectively, were excluded from the calculation. In addition, the table below summarizes the approximate number of share-based compensation awards which were excluded from the computation of net income (loss) per common share because their effect would be anti-dilutive:

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	2020	2019	2018
	(in thousands)		
Anti-dilutive shares	17	28	30

In addition, since 2018, certain performance-based restricted stock units have been excluded from the computation of diluted shares outstanding for the 2020, 2019 and 2018 periods presented as the performance conditions had not yet been met.

Note 17. Stockholders' Equity

Accumulated Other Comprehensive Loss

The following table presents the changes in accumulated other comprehensive loss (AOCL) by component for the years ended December 31, 2020, 2019 and 2018:

	Foreign currency translation adjustments	Interest rate swap	Foreign exchange forward contracts	Total AOCL
	(in thousands)			
Balance at December 31, 2017	\$ (558)	\$ —	\$ —	\$ (558)
Other comprehensive income (loss) before reclassifications	(14,428)	752	—	(13,676)
Amounts reclassified from AOCL	—	—	—	—
Net tax effect	—	(158)	—	(158)
Net current period other comprehensive income (loss)	(14,428)	594	—	(13,834)
Balance at December 31, 2018	(14,986)	594	—	(14,392)
Other comprehensive income (loss) before reclassifications	(7,026)	(3,469)	518	(9,977)
Amounts reclassified from AOCL	—	—	172	172
Net tax effect	—	730	(145)	585
Net current period other comprehensive income (loss)	(7,026)	(2,739)	545	(9,220)
Balance at December 31, 2019	(22,012)	(2,145)	545	(23,612)
Other comprehensive income (loss) before reclassifications	(8,099)	(1,698)	(777)	(10,574)
Amounts reclassified from AOCL	—	—	996	996
Net tax effect	—	400	(200)	200
Net current period other comprehensive income (loss)	(8,099)	(1,298)	19	(9,378)
Balance at December 31, 2020	\$ (30,111)	\$ (3,443)	\$ 564	\$ (32,990)

Note 18. 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	2020		2019		2018	
	Revenues	% of Total	Revenues	% of Total	Revenues	% of Total
Customer 1 - Vestas	\$ 830,302	49.7%	\$ 662,302	46.1%	\$ 329,472	32.0%
Customer 2 - GE	391,533	23.4%	369,067	25.7%	325,962	31.7%
Customer 3 - Nordex	255,912	15.3%	230,563	16.1%	195,156	19.0%
Customer 4 - Siemens Gamesa	78,137	4.7%	73,426	5.1%	115,779	11.2%

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

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

Customer	2020	2019
	% of Total	% of Total
Customer 1 - Vestas	35.0%	41.9%
Customer 3 - Nordex	40.8%	31.3%

Note 19. 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, Mexico, Turkey and India.

During the fourth quarter of 2020, the Company modified its system of reporting, resulting from changes to its internal management and organizational structure, which changed its reportable segments from (1) the United States (U.S.), (2) Asia, (3) Mexico and (4) Europe, the Middle East, Africa and India (EMEAI) to (1) the United States, (2) Asia, (3) Mexico, (4) Europe, the Middle East and Africa (EMEA) and (5) India. As of December 31, 2020, these reportable segments are reflective of how the Company's chief operating decision maker reviews operating results for the purposes of allocating resources and assessing performance. Disclosures for the years ended December 31, 2019 and 2018 have been adjusted to reflect the change in reportable segments.

As further described below, our operating segments are defined geographically as the U.S., Asia, Mexico, EMEA and India. All of our segments operate in their local currency except for the Mexico and Asia segments, which both include a U.S. parent company, and India, which operate in the U.S. dollar.

We divide our business operations into five geographic operating segments as follows:

Our U.S. segment includes (1) the manufacturing of wind blades at our Newton, Iowa facility, (2) the manufacturing of precision molding and assembly systems used for our transportation business at our Warren, Rhode Island facility, (3) the manufacturing of composite solutions for the transportation industry, which we also conduct at our Warren, Rhode Island facility, (4) wind blade inspection and repair services, (5) our advanced engineering center in Kolding, Denmark, which provides technical and engineering resources to our manufacturing facilities, (6) our engineering center in Berlin, Germany and (7) 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 Dafeng, China and Yangzhou, China, (2) the manufacturing of precision molding and assembly systems at our Taicang Port, China facility and (3) wind blade inspection and repair services.

Our Mexico segment includes (1) the manufacturing of wind blades at our three facilities in Juárez, Mexico and a facility in Matamoros, Mexico, (2) the manufacturing of precision molding and assembly systems and composite solutions for the transportation industry at our fourth Juárez, Mexico facility and (3) wind blade inspection and repair services.

Our EMEA segment manufactures wind blades from our two facilities in Izmir, Turkey and also performs wind blade inspection and repair services.

Our India segment manufactures wind blades from our new manufacturing facility in Chennai, India, which commenced operations in the first quarter of 2020.

TPI COMPOSITES, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

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

	2020	2019	2018
	(in thousands)		
Net sales by segment:			
U.S.	\$ 181,941	\$ 169,317	\$ 163,716
Asia	527,083	393,809	306,255
Mexico	495,839	435,606	268,756
EMEA	373,545	437,081	290,897
India	91,729	687	—
Total net sales	\$ 1,670,137	\$ 1,436,500	\$ 1,029,624
Net sales by geographic location(1):			
United States	\$ 181,941	\$ 169,317	\$ 163,716
China	527,083	393,809	306,255
Mexico	495,839	435,606	268,756
Turkey	373,545	437,081	290,897
India	91,729	687	—
Total net sales	\$ 1,670,137	\$ 1,436,500	\$ 1,029,624
Depreciation and amortization:			
U.S.	\$ 7,193	\$ 9,223	\$ 6,795
Asia	15,692	10,699	6,765
Mexico	18,587	12,577	7,891
EMEA	6,217	6,081	4,978
India	1,978	—	—
Total depreciation and amortization	\$ 49,667	\$ 38,580	\$ 26,429
Income (loss) from operations:			
U.S.	\$ (40,991)	\$ (78,278)	\$ (67,357)
Asia	62,869	24,132	28,147
Mexico	(9,611)	3,533	12,154
EMEA	23,331	70,449	51,774
India	(16,832)	(3,948)	—
Total income from operations	\$ 18,766	\$ 15,888	\$ 24,718
Capital expenditures:			
U.S.	\$ 6,949	\$ 8,321	\$ 21,305
Asia	13,135	22,471	11,218
Mexico	15,624	25,842	18,928
EMEA	10,887	11,023	1,237
India	19,071	6,751	—
Total capital expenditures	\$ 65,666	\$ 74,408	\$ 52,688
Tangible long-lived assets:			
U.S.	\$ 31,811	\$ 36,410	
Asia (China)	46,075	50,603	
Mexico	78,813	81,654	
EMEA (Turkey)	28,312	29,589	
India	23,990	6,751	
Total tangible long-lived assets	\$ 209,001	\$ 205,007	
Total assets:			
U.S.	\$ 118,456	\$ 107,918	
Asia (China)	250,582	210,438	
Mexico	251,764	275,646	

TPI COMPOSITES, INC. AND SUBSIDIARIES

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EMEA (Turkey)	201,691	218,244
India	133,764	14,431
Total assets	\$ 956,257	\$ 826,677

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

Note 20. Selected Quarterly Financial Data (Unaudited)

The following tables set forth certain unaudited financial information for each quarter of 2020 and 2019. 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:

	2020			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(in thousands, except per share data)			
Net sales	\$ 356,636	\$ 373,817	\$ 474,113	\$ 465,571
Gross profit (loss)	(3,873)	(4,747)	40,473	32,246
Net income (loss)	(492)	(66,101)	42,382	5,184
Net income (loss) per common share:				
Basic(1)	\$ (0.01)	\$ (1.87)	\$ 1.19	\$ 0.14
Diluted(1)	\$ (0.01)	\$ (1.87)	\$ 1.13	\$ 0.14

	2019			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(in thousands, except per share data)			
Net sales	\$ 299,780	\$ 330,771	\$ 383,836	\$ 422,113
Gross profit (loss)	(1,436)	22,551	25,931	30,802
Net income (loss)	(12,104)	1,828	(4,571)	(861)
Net income (loss) per common share:				
Basic(1)	\$ (0.35)	\$ 0.05	\$ (0.13)	\$ (0.02)
Diluted(1)	\$ (0.35)	\$ 0.05	\$ (0.13)	\$ (0.02)

(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.

Exhibit Index

Number	Description
3.1	<u>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)</u>
3.2	<u>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)</u>
4.1	<u>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)</u>
4.2	<u>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)</u>
4.3	<u>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)</u>
4.4	<u>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)</u>
4.5	<u>Description of Registrant's Securities Registered Pursuant to Section 12 of the Securities Act of 1934 (incorporated by reference to the Registrant's Annual Report on Form 10-K (File No. 001-37839) filed on March 2, 2020)</u>
10.1‡	<u>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)</u>
10.2‡	<u>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)</u>
10.3†	<u>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)</u>
10.4†	<u>Supply Agreement between General Electric International, Inc. and TPI Mexico III, LLC, entered into as of October 4, 2016 (incorporated by reference to Exhibit 10.4 of the Registrant's Current Report on Form 8-K (File No. 001-37839) filed on December 30, 2020)</u>
10.5†	<u>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 10.3 of the Registrant's Current Report on Form 8-K (File No. 001-37839) filed on December 30, 2020)</u>
10.6†	<u>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 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-37839) filed on December 30, 2020)</u>

Number	Description
10.7†	<u>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 (File No. 001-37839) filed on December 30, 2020)</u>
10.8	<u>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)</u>
10.9	<u>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)</u>
10.10	<u>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)</u>
10.11	<u>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)</u>
10.12	<u>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)</u>
10.13	<u>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)</u>
10.14	<u>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)</u>
10.15	<u>Lease between TPI-Composites S. de R.L. de C.V. and Deutsche Bank México, S.A. Institución de Banca Múltiple, División 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)</u>
10.16	<u>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 (incorporated by reference to Exhibit 10.17 to the Registrant's Annual Report on Form 10-K (File No. 001-37839) filed on March 5, 2019)</u>
10.17	<u>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)</u>
10.18	<u>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)</u>
10.19	<u>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)</u>
10.20	<u>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)</u>

Number	Description
10.21*	<u>Form of Employment Agreement between the Registrant and each of its executive officers</u>
10.22	<u>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)</u>
10.23	<u>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)</u>
10.24	<u>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)</u>
10.25	<u>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)</u>
10.26	<u>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)</u>
10.27	<u>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)</u>
10.28	<u>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)</u>
10.29	<u>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)</u>
10.30†	<u>Settlement Agreement and Release between the Registrant and Nordex SE, dated June 3, 2016 (incorporated by reference to Exhibit 10.5 to the Registrant's Current Report on Form 8-K (File No. 001-37839) filed on December 30, 2020)</u>
10.31	<u>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)</u>
10.32	<u>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)</u>
10.33	<u>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)</u>
10.34*	<u>Second Amended and Restated Non-Employee Director Compensation Policy</u>
10.35	<u>Agreement to Lease between Aarush (Phase III) Logistics Park Private Limited, Aarush (Phase IV) Logistics Parks Private Limited, Aarush (Phase V) Logistics Parks Private Limited, Aarush Logistics Parks Private Limited, Aarush (Phase II) Logistics Parks Private Limited and Prospect One Manufacturing LLP, dated February 4, 2019 (incorporated by reference to Exhibit 10.36 to the Registrant's Annual Report on Form 10-K (File No. 001-37839) filed on March 5, 2019)</u>

Number	Description
10.36	<u>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)</u>
10.37	<u>Amendment No. 2 dated as of June 29, 2020, 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 Current Report on Form 8-K (File No. 001-37839) filed on June 30, 2020)</u>
10.38	<u>Incremental Facility Agreement dated as of February 26, 2020, 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 Current Report on Form 8-K (File No. 001-37839) filed on February 27, 2020)</u>
10.39	<u>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)</u>
10.40	<u>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)</u>
10.41	<u>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)</u>
10.42	<u>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)</u>
10.43	<u>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)</u>
10.44	<u>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)</u>
10.45	<u>Amendment No. 1 dated as of May 24, 2019 to the 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 the lenders 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 August 7, 2019)</u>
21.1*	<u>List of Subsidiaries</u>
23.1*	<u>Consent of KPMG LLP, Independent Registered Public Accounting Firm</u>
24.1	<u>Power of Attorney (incorporated by reference to the signature page of this Annual Report on Form 10-K)</u>
31.1*	<u>Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>
31.2*	<u>Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>
32.1**	<u>Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>

Number	Description
32.2**	<u>Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>
101.INS*	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data file because its XBRL tags are embedded within the Inline XBRL document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104 *	Cover Page Interactive Data File (formatted as Inline XBRL with applicable taxonomy extension information contained in Exhibits 101.*) (filed herewith)

* 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 granted 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: February 25, 2021

By: /s/ Bryan R. Schumaker

Bryan R. Schumaker
Chief Financial Officer
(Principal Financial Officer)

We, the undersigned officers and directors of TPI Composites, Inc., hereby severally constitute and appoint William E. Siwek and Bryan R. Schumaker 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.

Name	Title	Date
/s/ William E. Siwek William E. Siwek	President, Chief Executive Officer and Director (Principal Executive Officer)	February 25, 2021
/s/ Bryan R. Schumaker Bryan R. Schumaker	Chief Financial Officer (Principal Financial Officer)	February 25, 2021
/s/ Adan Gossar Adan Gossar	Chief Accounting Officer (Principal Accounting Officer)	February 25, 2021
/s/ Jayshree S. Desai Jayshree S. Desai	Director	February 25, 2021
/s/ Philip J. Deutch Philip J. Deutch	Director	February 25, 2021
/s/ Paul G. Giovacchini Paul G. Giovacchini	Lead Independent Director	February 25, 2021
/s/ Jack A. Henry Jack A. Henry	Director	February 25, 2021
/s/ Bavan M. Holloway Bavan M. Holloway	Director	February 25, 2021
/s/ Linda P. Hudson Linda P. Hudson	Director	February 25, 2021
/s/ James A. Hughes James A. Hughes	Director	February 25, 2021
/s/ Tyrone M. Jordan Tyrone M. Jordan	Director	February 25, 2021
/s/ Steven C. Lockard Steven C. Lockard	Director and Chairman of the Board	February 25, 2021
/s/ Daniel G. Weiss Daniel G. Weiss	Director	February 25, 2021

EMPLOYMENT AGREEMENT

This Employment Agreement (“Agreement”) is between TPI Composites, Inc., a Delaware corporation (the “Company”), and [Name of Executive] (the “Executive”) and is **made effective as of []**, 2020 (the “Effective Date”).

WHEREAS, the Company desires to employ the Executive and the Executive desires to be employed by the Company on the terms and conditions contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Employment.

(a) Term. The term of this Agreement shall commence on the Effective Date and continue until terminated in accordance with the provisions of Section 3 (the “Term”). The Executive’s employment with the Company shall be “at will,” meaning that the Executive’s employment may be terminated by the Company or the Executive at any time and for any reason.

(b) Position and Duties. During the Term, the Executive shall serve as the [Title] of the Company, and shall have such powers and duties as may from time to time be prescribed by the [Title of Supervisor] of the Company (the “[Title of Supervisor]”) or other authorized executive, provided that such duties are consistent with the Executive’s position or other positions that Executive may hold from time to time. The Executive shall report to the [Title of Supervisor]. The Executive shall devote Executive’s full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may serve on other boards of directors, with the approval of the Board of Directors of the Company (the “Board”), or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with the Executive’s performance of Executive’s duties to the Company as provided in this Agreement.

2. Compensation and Related Matters.

(a) Base Salary. During the Term, the Executive’s initial annual base salary shall be [Base Salary] Dollars (\$___,000). The Executive’s base salary shall be redetermined annually by the [Title of Supervisor]. The annual base salary in effect at any given time is referred to herein as “Base Salary.” The Base Salary shall be payable in a manner that is consistent with the Company’s usual payroll practices for senior executives.

(b) Incentive Compensation. During the Term, the Executive shall be eligible to receive cash incentive compensation as determined by the Board or the Compensation Committee from time to time. The Executive’s initial target annual incentive compensation shall be [Bonus Target Percentage] (___%) of Executive’s Base Salary. Except as provide herein, to

earn incentive compensation, the Executive must be employed by the Company on the day such incentive compensation is paid.

(c)Equity-based Awards. The Executive will be eligible for an annual award under the Company's 2015 Amended and Restated Stock Option and Incentive Plan (the "Plan"). The type and composition of awards to be issued under this annual award program will be determined by the Board. Any grants are contingent upon and subject to final approval by the Board and the terms and conditions of the Plan, including, without limitation, Executive's continued employment with TPI.

(d)Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by the Executive during the Term in performing services hereunder, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(e)Other Benefits. During the Term, the Executive shall be eligible to participate in or receive benefits under the Company's employee benefit plans in effect from time to time, subject to the terms of such plans.

(f)Vacations. During the Term, the Executive shall be entitled to accrue paid vacation in accordance with the Company's applicable vacation policy.

3.Termination. During the Term, the Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a)Death. The Executive's employment hereunder shall terminate upon Executive's death.

(b)Disability. The Company may terminate the Executive's employment if the Executive is disabled and unable to perform the essential functions of the Executive's then existing position or positions under this Agreement with or without reasonable accommodation for a period of one hundred eighty (180) days (which need not be consecutive) in any 12-month period. If any question shall arise as to whether during any period the Executive is disabled so as to be unable to perform the essential functions of the Executive's then existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 3(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993, 29 U.S.C. §2601 *et seq.* and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq.*

(c)Termination by Company for Cause. The Company may terminate the Executive's employment hereunder for Cause by a vote of the Board at the meeting of Board

called and held for such purpose. For purposes of this Agreement, "Cause" shall mean: (i) conduct by the Executive constituting a material act of misconduct in connection with the performance of Executive's duties, including, without limitation, misappropriation of funds or property of the Company or any of its subsidiaries or affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (ii) the commission by the Executive of any felony or a misdemeanor involving moral turpitude, deceit, dishonesty or fraud, or any conduct by the Executive that would reasonably be expected to result in material injury or reputational harm to the Company or any of its subsidiaries and affiliates if Executive was retained in Executive's position; (iii) continued non-performance by the Executive of Executive's duties hereunder (other than by reason of the Executive's physical or mental illness, incapacity or disability) which has continued for more than 30 days following written notice of such non-performance from the Board; (iv) a breach by the Executive of any of the provisions contained in Section 7 of this Agreement; (v) a material violation by the Executive of the Company's written employment policies; or (vi) failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation.

(d)Termination Without Cause. The Company may terminate the Executive's employment hereunder at any time without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 3(c) and does not result from the death or disability of the Executive under Section 3(a) or (b) shall be deemed a termination without Cause.

(e)Termination by the Executive. The Executive may terminate Executive's employment hereunder at any time for any reason, including but not limited to Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events without the Executive's express written consent: (i) a material diminution in the Executive's responsibilities, authority or duties; (ii) a material reduction in the Executive's Base Salary except for across-the-board salary reductions based on the Company's financial performance similarly affecting all or substantially all senior management employees of the Company; (iii) a material change in the geographic location at which the Executive provides services to the Company (except for required travel on Company business); or (iv) the material breach by the Company of this Agreement. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the first occurrence of the Good Reason condition within sixty (60) days of the first occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than thirty (30) days following such notice (the "Cure Period") to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates Executive's employment within sixty (60) days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f)Notice of Termination. Except for termination as specified in Section 3(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g)Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by Executive's death, the date of Executive's death; (ii) if the Executive's employment is terminated on account of disability under Section 3(b) or by the Company for Cause under Section 3(c), the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Company under Section 3(d), the date on which a Notice of Termination is given; (iv) if the Executive's employment is terminated by the Executive under Section 3(e) without Good Reason, thirty (30) days after the date on which a Notice of Termination is given, and (v) if the Executive's employment is terminated by the Executive under Section 3(e) with Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, in the event that either party gives a Notice of Termination, the Company may unilaterally accelerate the Date of Termination.

4.Compensation Upon Termination.

(a)Termination Generally. If the Executive's employment with the Company is terminated for any reason, the Company shall pay or provide to the Executive (or to Executive's authorized representative or estate) (i) any Base Salary earned through the Date of Termination, unpaid expense reimbursements (subject to, and in accordance with, Section 2(c) of this Agreement) and unused vacation that accrued through the Date of Termination (but in any event no more than the amount of unused vacation that would accrue in one fiscal year) on or before the time required by law but in no event more than thirty (30) days after the Executive's Date of Termination; and (ii) any vested benefits the Executive may have under any employee benefit plan of the Company through the Date of Termination, which vested benefits shall be paid and/or provided in accordance with the terms of such employee benefit plans (collectively, the "Accrued Benefits").

(b)Termination by the Company Without Cause or by the Executive with Good Reason. During the Term, if the Executive's employment is terminated by the Company without Cause as provided in Section 3(d), or the Executive terminates Executive's employment for Good Reason as provided in Section 3(e), then the Company shall pay the Executive the Accrued Benefits. In addition, subject to the Executive signing a separation agreement containing, among other provisions, a general release of claims in favor of the Company and related persons and entities, confidentiality, return of property and non-disparagement, in a form and manner satisfactory to the Company and substantially similar to the form attached hereto as Exhibit A (the "Separation Agreement and Release"), and the Separation Agreement and Release becoming irrevocable and fully effective, all within sixty (60) days after the Date of Termination:

(i) the Company shall pay the Executive an amount equal to [] percent ([]%) of the Executive's current Base Salary (the "Severance Amount"); and

(ii)if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for [number of months] months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(iii)the amounts payable under this Section 4(b) shall be paid out in substantially equal installments in accordance with the Company's payroll practice over [number of months] months commencing within sixty (60) days after the Date of Termination; provided, however, that if the 60-day period begins in one (1) calendar year and ends in a second calendar year, the Severance Amount shall begin to be paid in the second calendar year by the last day of such 60-day period; provided, further, that the initial payment shall include a catch-up payment to cover amounts retroactive to the day immediately following the Date of Termination. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2).

(iv)The receipt of any severance payments or benefits pursuant to Section 4 shall be subject to Executive not violating the Restrictive Covenants Agreement referenced in Section 7 of this Agreement and attached hereto as Exhibit B, the terms of which are hereby incorporated by reference. In the event Executive breaches the Restrictive Covenants Agreement, in addition to all other legal and equitable remedies, the Company shall have the right to terminate or suspend all continuing payments and benefits to which Executive may otherwise be entitled pursuant to Section 4 without affecting the Executive's release or Executive's obligations under the Separation Agreement and Release.

5.Change in Control Payment. The provisions of this Section 5 set forth certain terms of an agreement reached between the Executive and the Company regarding the Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to Executive's assigned duties and Executive's objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 4(b) regarding severance pay and benefits upon a termination of employment, if such termination of employment occurs on or within twelve (12) months after the occurrence of the first event constituting a Change in Control. These provisions shall terminate and be of no further force or effect beginning twelve (12) months after the occurrence of a Change in Control.

(a)Change in Control. During the Term, if on or within twelve (12) months after a Change in Control, the Executive's employment is terminated by the Company without Cause as provided in Section 3(d) or the Executive terminates Executive's employment for Good Reason as provided in Section 3(e), then the Company shall pay the Executive the Accrued Benefits. In addition, subject to the signing of the Separation Agreement and Release by the

Executive and the Separation Agreement and Release becoming irrevocable and fully effective, all within sixty (60) days after the Date of Termination,

(i) the Company shall pay the Executive a lump sum in cash in an amount equal to [] percent ([]%) of the sum of (A) the Executive's current Base Salary (or the Executive's Base Salary in effect immediately prior to the Change in Control, if higher) and (B) the Executive's Target Incentive Compensation. In addition, Executive shall be entitled to the prorated amount of Executive's annual incentive compensation as set forth in Section 2(b) (with proration based on the actual amount of annual incentive compensation that Executive would have been paid if he had remained employed through the applicable calendar year) for the period commencing on January 1 of the calendar year in which Executive's termination occurs through the Date of Termination, payable when incentive compensation is payable to all other senior executives of the Company; provided that such date shall be no later than March 15 of the year following the year in which the annual incentive compensation relates. For purposes of this Agreement, "Target Incentive Compensation" shall mean the Executive's current target annual incentive compensation; and

(ii) notwithstanding anything to the contrary in any applicable stock option agreement or stock-based award agreement, (a) all stock options and other stock-based awards granted to the Executive that are subject to time-based vesting shall immediately accelerate and become fully exercisable or nonforfeitable as of the later of (i) Date of Termination or (ii) the effective date of the Separation Agreement and Release (the "Accelerated Vesting Date") and (b) all stock options and other stock-based awards granted to the Executive that are subject to performance-based vesting shall immediately accelerate and become fully exercisable or nonforfeitable as of the Accelerated Vesting Date, to the extent that applicable performance goals have been met or as otherwise contemplated in the applicable award agreement as of the Date of Termination; provided, that in each case any termination or forfeiture of the unvested portion of such equity awards that would otherwise occur on the Date of Termination in the absence of this Agreement will be delayed until the effective date of the Separation Agreement and Release and will only occur if the vesting pursuant to this subsection does not occur due to the absence of the Separation Agreement and Release becoming fully effective within the time period set forth therein. Notwithstanding the foregoing, no additional vesting of the equity awards shall occur during the period between the Date of Termination and the Accelerated Vesting Date. The Executive shall have one year from the Date of Termination to exercise any such vested stock option awards, notwithstanding any contrary post-termination exercise periods described in the applicable award agreements; and

(iii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for [number of months] months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(iv) The amounts payable under this Section 5(a), to the extent taxable, shall be paid or commence to be paid within sixty (60) days after the Date of Termination; provided, however, that if the 60-day period begins in one (1) calendar year and ends in a second calendar year, the amounts, to the extent they qualify as “non-qualified deferred compensation” within the meaning of Section 409A of the Code, shall be paid or commence to be paid in the second calendar year by the last day of such 60-day period.

(v) The receipt of any severance payments or benefits pursuant to Section 5 shall be subject to Executive not violating the Restrictive Covenants Agreement referenced in Section 7 of this Agreement and attached hereto as Exhibit B, the terms of which are hereby incorporated by reference. In the event Executive breaches the Restrictive Covenants Agreement, in addition to all other legal and equitable remedies, the Company shall have the right to terminate or suspend all continuing payments and benefits to which Executive may otherwise be entitled pursuant to Section 5 without affecting the Executive’s release or Executive’s obligations under the Separation Agreement and Release.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that the amount of any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, calculated in a manner consistent with Section 280G of the Internal Revenue Code of 1986, as amended (the “Code”) and the applicable regulations thereunder (the “Severance Payments”), would be subject to the excise tax imposed by Section 4999 of the Code, the following provisions shall apply:

(A) If the Severance Payments, reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes payable by the Executive on the amount of the Severance Payments which are in excess of the Threshold Amount, are greater than or equal to the Threshold Amount, the Executive shall be entitled to the full benefits payable under this Agreement.

(B) If the Threshold Amount is less than (x) the Severance Payments, but greater than (y) the Severance Payments reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes on the amount of the Severance Payments which are in excess of the Threshold Amount, then the Severance Payments shall be reduced (but not below zero) to the extent necessary so that the sum of all Severance Payments shall not exceed the Threshold Amount. In such event, the Severance Payments shall be reduced in the following order: (1) cash payments not subject to Section 409A of the Code; (2) cash payments subject to Section 409A of the Code; (3) equity-based payments and acceleration; and (4) non-cash forms of benefits. To the extent any payment is to be made over time (e.g., in installments, etc.), then the payments shall be reduced in reverse chronological order.

(ii) For the purposes of this Section 5(b), “Threshold Amount” shall mean three (3) times the Executive’s “base amount” within the meaning of Section 280G(b)(3) of the Code and the regulations promulgated thereunder less one dollar (\$1.00); and “Excise Tax” shall mean the excise tax imposed by Section 4999 of the Code, and any interest or penalties incurred by the Executive with respect to such excise tax.

(iii) The determination as to which of the alternative provisions of Section 5(b)(i) shall apply to the Executive shall be made by a nationally recognized accounting firm selected by the Company (the “Accounting Firm”), which shall provide detailed supporting calculations both to the Company and the Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. For purposes of determining which of the alternative provisions of Section 5(b)(i) shall apply, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of the Executive’s residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(b) Definitions. For purposes of this Section 5, the following terms shall have the following meanings:

“Change in Control” shall mean “Sale Event,” as such term is defined in the Plan.

6. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive’s separation from service within the meaning of Section 409A of the Code, the Company determines that the Executive is a “specified employee” within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that the Executive becomes entitled to under this Agreement on account of the Executive’s separation from service would be considered deferred compensation otherwise subject to the twenty percent (20%) additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six (6) months and one (1) day after the Executive’s separation from service, or (B) the Executive’s death. If any such delayed cash payment is otherwise payable on an installment basis, the first payment shall include a catch-up payment covering amounts that would otherwise have been paid during the six-month period but for the application of this provision, and the balance of the installments shall be payable in accordance with their original schedule.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as

administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one (1) taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year (except for any lifetime or other aggregate limitation applicable to medical expenses). Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes “non-qualified deferred compensation” under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive’s termination of employment, then such payments or benefits shall be payable only upon the Executive’s “separation from service.” The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-1(h).

(d) The parties intend that this Agreement shall be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2). The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

7. Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement. The Executive agrees to the terms of the Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement (“Restrictive Covenants Agreement”) attached hereto as Exhibit B, the terms of which are hereby incorporated by reference as material terms of this Agreement; provided that the term “Restricted Period” as used in the Restrictive Covenants Agreement shall mean the greater of (i) six months, or (ii) the number of months equal to the quotient of (a) the total amount of severance payable to Executive under Section 4(b)(i) or Section 5(a)(i), as applicable, and (b) the monthly Base Salary of Executive. Notwithstanding the foregoing, if an arbitrator or court of competent jurisdiction determines that such period is unenforceable, then “Restricted Period” shall mean the [] month period immediately following the date on which the Executive’s employment terminates for any reason. Notwithstanding anything to the contrary in the Restrictive Covenants Agreement, pursuant to the federal Defend Trade Secrets Act of 2016, the Executive shall not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that (a) is made (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a

suspected violation of law; or (b) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal.

8. Mediation and Arbitration of Disputes. Any controversy or claim arising out of or relating to this Agreement or the breach thereof or otherwise arising out of the Executive's employment or the termination of that employment regardless of whether based on any statute or the common law (including, without limitation, any claims of unlawful employment discrimination whether based on age or otherwise) (collectively, an "Employment Dispute") shall, to the fullest extent permitted by law, be settled by the procedures of this Section 8. The parties shall first make good faith efforts to resolve any Employment Dispute through direct discussions. If not resolved through direct discussions, a party seeking relief with respect to an Employment Dispute shall invoke the Employment Mediation Procedures of the Employment Arbitration Rules and Mediation Procedures (the "Rules") of the American Arbitration Association ("AAA"), unless the parties agree to waive the Employment Mediation Procedures. The location of any such mediation shall be Phoenix, Arizona. In the event of the termination of a mediation without resolution of the Employment Dispute, a party seeking relief with respect to such dispute shall submit such dispute to arbitration before the AAA in Phoenix, Arizona pursuant to the Rules, including, but not limited to, the rules and procedures applicable to the selection of arbitrators. In the event that any person or entity other than the Executive or the Company may be a party with regard to any such controversy or claim, such controversy or claim shall be submitted to arbitration subject to such other person's or entity's agreement. The Executive agrees not to assert a class action or representative action claim against the Company in arbitration or otherwise, nor to serve or join as a member of a class action or representative action. The Executive agrees only to submit the Executive's own, individual claims in arbitration and shall not seek to represent the interests of any other person. Judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. This Section 8 shall be specifically enforceable. Notwithstanding the foregoing, this Section 8 shall not preclude either party from pursuing a court action for the sole purpose of obtaining a temporary restraining order or a preliminary injunction in circumstances in which such relief is appropriate without first utilizing any or all of the procedures of this Section 8; *provided* that any other relief shall be pursued through an arbitration proceeding pursuant to this Section 8.

9. Integration. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements between the parties concerning such subject matter.

10. Withholding; Tax Effect. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law. Nothing in this Agreement shall be construed to require the Company to make any payments to compensate the Executive for any adverse tax effect associated with any payments or benefits or for any deduction or withholding from any payment or benefit.

11. Successor to the Executive. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal representatives, executors, administrators, heirs, distributees, devisees and legatees. In the event of the Executive's death after Executive's termination of employment but prior to the completion by the Company of all payments due him

under this Agreement, the Company shall continue such payments to the Executive's beneficiary designated in writing to the Company prior to his death (or to Executive's estate, if the Executive fails to make such designation).

12.Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of this Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

13.Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

14.Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

15.Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

16.Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

17.Governing Law. This is an Arizona contract and shall be construed under and be governed in all respects by the laws of the State of Arizona, without giving effect to the conflict of laws principles of such State.

18.Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

19.Successor to Company. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a material breach of this Agreement.

20.Gender Neutral. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

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

TPI COMPOSITES, INC.

By: _____

William E. Siwek

Its: President and Chief Executive Officer

[Name of Executive]

Date

[Signature Page to the Form of Employment Agreement]

EXHIBIT A

SEPARATION AGREEMENT AND RELEASE OF CLAIMS

This AGREEMENT, dated as of ____, 201[__] is between _____ (“Executive”) and TPI Composites, Inc. and all of its divisions, parents, subsidiaries, predecessors, successors and assigns (collectively, the “Company”).

WHEREAS, Executive is employed by the Company pursuant to an Employment Agreement, dated as of _____, ____ setting forth Executive’s terms and conditions of employment (the “Employment Agreement”);

WHEREAS, Executive’s employment with the Company will terminate [without Cause][for Good Reason] (as that term is defined in the Employment Agreement) effective ____, ____ (the “Termination Date”); and

WHEREAS, the parties hereto desire to set forth their mutual agreement concerning the terms and conditions of the termination of the employment of Executive, including the exact nature and the amount of compensation to be provided to Executive and any other rights of the Company and Executive following Executive’s termination of employment with the Company.

NOW, THEREFORE, in consideration of the respective agreements of the parties contained herein, and subject to the conditions set forth herein, the parties hereto acknowledge and agree as follows:

1. **Severance Payment.** Provided Executive has not revoked this Agreement in accordance with Section 7 and Executive’s compliance with Executive’s obligations under the Employment Agreement and this Agreement, in exchange for the promises set forth herein and in the Employment Agreement, the Company agrees to provide Executive with the payments and benefits set forth in [Section 4] [Section 5] of the Employment Agreement (the “Severance Package”). Employee acknowledges and agrees that this Severance Package constitutes adequate legal consideration for the promises and representations made by Employee in this Agreement. Employee acknowledges and agrees that if Employee violates the terms of this Agreement or the continuing obligations under the Employment Agreement including, but not limited to those pertaining to post-employment restrictions, Company may terminate any payments and the provision of benefits described herein, and seek such other damages or remedies as may be appropriate.
2. **Nondisparagement.** Executive shall not make public statements or publish or make (under circumstances reasonably likely to result in such statement being published) any statement that adversely affects or otherwise maligns the business or reputation of the Company; any affiliate, subsidiary, or parent of the Company; or any of their respective products, services, employees, officers, or directors. The Company’s officers and directors shall not make public statements or publish or make (under circumstances reasonably likely to result in such statement being published) any statement that adversely affects or otherwise maligns the business or reputation of Executive.

3. Return of Property & Confidentiality. Executive shall return to the Company all of the Company's property in Executive's possession, including, but not limited to, all electronic data, computer-related equipment, keys and other devices used to access the Company's property, manuals, handbooks, and documents. Executive shall not divulge to any persons any Confidential Information (as defined below) gathered or learned during Executive's employment with the Company and shall not utilize Confidential Information for either Executive's or any other person's or entity's benefit. "Confidential Information" includes, but is not limited to, the existence and terms of this Agreement, any fact, information or material that is not generally available to the public, such as corporate information, including plans, strategies, methods, policies, resolutions, negotiations or litigation; marketing information, including strategies, methods, customer identities or other information about customers, prospect identities or other information about prospects, or market analyses or projections; financial information, including cost and performance data, debt arrangements, equity structure, investors and holdings, purchasing and sales data and price lists; operational and technological information, including plans, specifications, manuals, forms, templates, software, designs, methods, procedures, formulas, discoveries, inventions, improvements, concepts and ideas; and personnel information, including personnel lists, reporting or organizational structure, resumes, personnel data, compensation structure, performance evaluations and termination arrangements or documents. Confidential Information also includes information received in confidence by the Company from its customers or suppliers or other third parties. Confidential Information includes such information in any form or format. The Company and Executive acknowledge and agree that the Confidential Information constitutes valuable, special and unique property of the Company, and in some cases of customers and to which Executive has had access on a confidential basis, and derives economic value because it is not generally known to the public or others who could benefit from its disclosure or use, or is otherwise required to be kept confidential. If disclosure of Confidential Information is sought of Executive by a subpoena or judicial or administrative order, Executive shall give the Company prompt notice thereof within five days of Executive's receipt of such subpoena or order, and the Company may resist by all legitimate means any attempt, of any kind whatever, to compel disclosure of Confidential Information. To the extent Executive has any doubt, either now or in the future, as to whether information Executive possesses is Confidential Information, Executive will contact the Company for clarification before divulging or using such information. Executive agrees that a breach of this provision of the Agreement will result in immediate, irreparable damage and harm to the Company and that the Company will be entitled to obtain immediate, temporary, preliminary and permanent injunctive relief to prevent the breach and also recover its reasonable attorneys' fees and costs incurred seeking to or obtaining any remedy for Executive's breach.

4. Release & Waiver of Claims by Executive. In consideration for the obligations set forth in this Agreement and for other valuable consideration, the sufficiency of which is hereby acknowledged, Executive hereby promises to not sue and forever waives, releases and discharges the Company (as defined above) and the Company's directors, officers, members, employees, agents, insurers, and attorneys from any and all charges, claims,

demands, actions, causes of action, or suits at law or in equity, of whatsoever kind or nature, whether presently known or unknown, suspected or unsuspected, which Executive may now have or may now or hereafter assert including, but not limited to, any and all claims relating to any omissions, acts, or events that have occurred until and including the date on which this Agreement becomes effective, including but not limited to, any and all claims relating to Executive's employment with the Company or the cessation of Executive's employment with the Company, whether now known or unknown, including but not limited to claims for discrimination or unequal pay or retaliation under state or federal law, including without limitation Title VII of the Civil Rights Act, the Equal Pay Act, the Age Discrimination in Employment Act, the Americans with Disabilities Act, the Family and Medical Leave Act, the Fair Labor Standards Act, the Workers' Adjustment and Retraining Notification Act, the Employee Retirement Income Security Act and the Consolidated Omnibus Budget Reconciliation Act ("COBRA"), claims under any applicable state or local law relating to employment, claims for emotional distress or other damages, claims in tort or contract, claims under any applicable whistleblower law and any similar federal, state or local law, and claims for libel, slander, defamation, invasion of privacy, promissory estoppel, breach of any duty of good faith and fair dealing, and wrongful discharge in violation of public policy. This release does not extend to any obligations incurred or specified under this Agreement; any vested rights in any Company-sponsored deferred savings plan or pension plan as of the time of the Termination Date; Executive's right to continue group health care coverage under COBRA; the right to receive workers' compensation benefits for any work-related injuries; unemployment insurance benefits; any claim that cannot be released or waived as a matter of law; any rights or claims that may arise after the date this Agreement is executed; and any rights or claims of Executive under the Indemnification Agreement between Executive and the Company. Executive waives all rights to assert a claim for relief available under any and all such laws, including but not limited to, claims for attorneys' fees, damages, reinstatement, back pay, or injunctive or other equitable relief.

Executive acknowledges that the Company has paid Executive all salary, wages, commissions, bonuses, vacation, and other compensation due to Executive, if any, as of the date of Executive's signature hereon, and has paid for all reimbursable expenses to which Executive is entitled and which have been submitted by Executive to the Company as of the date of Executive's signature hereon.

5. Acknowledgments and Agreements. Executive acknowledges and agrees that (a) Executive freely and voluntarily entered into this Agreement, (b) before entering into this Agreement, Executive was encouraged to consult an attorney of Executive's choice, (c) Executive was advised to consult with an attorney before signing this Agreement and had an opportunity and sufficient time to review this Agreement with Executive's attorney, (d) Executive fully understands the terms of this Agreement, and (e) Executive is receiving pursuant to this Agreement amounts and consideration in addition to that to which Executive is not already entitled.
6. Review of Agreement. Executive acknowledges further that, before entering into this Agreement, Executive had at least twenty one (21) days through _____, ____ to review

and consider it. Executive further acknowledges that Executive used as much or as little of the twenty-one (21) day period as Executive desired before entering into this Agreement.

7. Revocation. Executive may revoke this Agreement within seven (7) days of the date of Executive's execution hereof, in which case this Agreement and all of Executive's rights under the Agreement shall be null and void. Revocation can be made by providing written notice to the Company no later than the close of business on the eighth (8th) day after the date of the execution hereof. Executive acknowledges that this Agreement shall not become effective and the Company shall have no obligation under this Agreement unless and until the seven (7) day revocation period specified by this section expires without Executive having effectively revoked this Agreement.
8. Warranties and Representations. Executive warrants, represents and covenants that neither Executive nor a person or entity acting on Executive's behalf has initiated, reported, or filed any complaints or charges against the Company or any of its affiliates, parents or subsidiaries with any court, government agency or regulatory body and that Executive has not assigned to any third party any claim against or involving the Company or any of its affiliates, parents or subsidiaries. Executive acknowledges and agrees that a breach of this paragraph or any other provision of this Agreement will be material and will result in cessation of and Executive's obligation to immediately repay to the Company, upon its demand, the Severance Package.
9. Invalidity of Provision. The invalidity or unenforceability of any provision of this Agreement in any jurisdiction shall not affect the validity or enforceability of the remainder of this Agreement in that jurisdiction or the validity or enforceability of this Agreement, including that provision, in any other jurisdiction. If any provision of this Agreement is held unreasonable, unlawful, or unenforceable in any respect, such provision shall be interpreted, revised, or applied in a manner that renders it lawful and enforceable to the fullest extent possible.
10. Governing Law. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Arizona without giving effect to the conflicts of law principles thereof.
11. Miscellaneous. No provision of this Agreement may be modified or discharged unless such modification or discharge is agreed to in writing and signed by Executive and the Company. No provision of this Agreement may be waived unless such waiver is in writing and signed by the party to be charged therewith. No waiver by either party hereto at any time of any breach by the other party hereto of any provision of this Agreement to be performed by such other party shall be deemed a waiver of any other provisions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, express or implied, with respect to the subject matter hereof have been made by any party that are not expressly set forth in this Agreement.

IN WITNESS WHEREOF, this Agreement has been executed and entered into by the parties hereto as of the date first written above.

TPI COMPOSITES, INC.

By: _____

[Name of Executive]

Its: _____

Printed Name: _____

Date: _____

Date: _____

Exhibit B



TPI Composites, Inc.

Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement

For good and valuable consideration, I, **[Name of Executive]**, agree to the following terms of this Employee Non-Competition, Non-Solicitation, Confidentiality, and Assignment Agreement (“the Agreement”). For purposes of this Agreement the “Company” shall mean TPI Composites, Inc. and any parent, subsidiaries and affiliates.

1. Proprietary Information. I agree that all information, whether or not in writing, concerning the Company’s business, technology, business relationships or financial affairs that the Company has not released to the general public (collectively, “Proprietary Information”) is and will be the exclusive property of the Company. By way of illustration, Proprietary Information may include information or material that has not been made generally available to the public, such as: (a) *corporate information*, including plans, strategies, methods, policies, resolutions, negotiations or litigation; (b) *marketing information*, including strategies, methods, customer identities or other information about customers, prospect identities or other information about prospects, or market analyses or projections; (c) *financial information*, including cost and performance data, debt arrangements, equity structure, investors and holdings, purchasing and sales data and price lists; and (d) *operational and technological information*, including plans, specifications, manuals, forms, templates, software, designs, methods, procedures, formulas, discoveries, inventions, improvements, concepts and ideas; and (e) *personnel information*, including personnel lists, reporting or organizational structure, resumes, personnel data, compensation structure, performance evaluations and termination arrangements or documents. Proprietary Information also includes information received in confidence by the Company from its customers or suppliers or other third parties.

2. Recognition of Company’s Rights. I will not, at any time, without the Company’s prior written permission, either during or after my employment, disclose any Proprietary Information to anyone outside of the Company, or use or permit to be used any Proprietary Information for any purpose other than the performance of my duties as an employee of the Company. I will cooperate with the Company and use my best efforts to prevent the unauthorized disclosure of all Proprietary Information. I will deliver to the Company all copies of Proprietary Information in my possession or control upon the earlier of a request by

the Company or termination of my employment. Notwithstanding anything to the contrary contained in this Agreement, pursuant to the federal Defend Trade Secrets Act of 2016, Employee shall not be criminally or civilly held liable under any federal or state trade secret law for the disclosure of a trade secret that (a) is made (i) in confidence to a federal, state or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (b) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal.

3. Rights of Others. I understand that the Company is now and may hereafter be subject to non-disclosure or confidentiality agreements with third persons that require the Company to protect or refrain from use of proprietary information. I agree to be bound by the terms of such agreements in the event I have access to such proprietary information.

4. Commitment to Company; Avoidance of Conflict of Interest. While an employee of the Company, I will devote my full-time efforts to the

Company's business and, except as otherwise agreed in a formal written employment agreement executed by a duly authorized officer of the Company, I will not engage in any other business activity that conflicts with my duties to the Company. I will advise the president of the Company or his or her nominee at such time as any activity of either the Company or another business presents me with a conflict of interest or the appearance of a conflict of interest as an employee of the Company. I will take whatever action is requested of me by the Company to resolve any conflict or appearance of conflict that it finds to exist.

5. Developments. I will make full and prompt disclosure to the Company of all inventions, discoveries, designs, developments, methods, modifications, improvements, processes, algorithms, databases, computer programs, formulae, techniques, trade secrets, graphics or images, audio or visual works,

and other works of authorship (collectively "Developments"), whether or not patentable or copyrightable, that are created, made, conceived or reduced to practice by me (alone or jointly with others) or under my direction during the period of my employment. I acknowledge that all work performed by me is on a "work for hire" basis, and I hereby do assign and transfer and, to the extent any such assignment cannot be made at present, will assign and transfer, to the Company and its successors and assigns all my right, title and interest in all Developments that (a) relate to the business of the Company or any customer of or supplier to the Company or any of the products or services being researched, developed, manufactured or sold by the Company or that may be used with such products or services; or (b) result from tasks assigned to me by the Company; or (c) result from the use of premises or personal property (whether tangible or intangible) owned, leased or contracted for by the Company ("Company-Related Developments"), and all related patents, patent applications, trademarks and trademark applications, copyrights and copyright applications, and other intellectual property rights in all countries and territories worldwide and under any international conventions ("Intellectual Property Rights").

To preclude any possible uncertainty, I have set forth on Exhibit 1 attached hereto a complete list of Developments that I have, alone or jointly with others, conceived, developed or reduced to practice prior to the commencement of my employment with the Company that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement ("Prior Inventions"). I have also listed on Exhibit 1 all patents and patent applications in which I am named as an inventor, other than those which have been assigned to the Company ("Other Patent Rights"). If no such disclosure is attached, I represent that there are no Prior Inventions or Other Patent Rights. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, process or machine or other work done for the Company, I hereby grant to the Company a nonexclusive, royalty-free, irrevocable, worldwide license (with the full right to sublicense) to make, have made, modify, use and sell such Prior Invention. Notwithstanding the foregoing, I will not incorporate, or permit to be incorporated, Prior Inventions in any Company-Related Development without the Company's prior written consent.

This Agreement does not obligate me to assign to the Company any Development which, in the sole judgment of the Company, reasonably exercised, is developed entirely on my own time and does not relate

to the business efforts or research and development efforts in which, during the period of my employment, the Company actually is engaged or reasonably would be engaged, and does not result from the use of premises or equipment owned or leased by the Company. However, I will also promptly disclose to the Company any such Developments for the purpose of determining whether they qualify for such exclusion. I understand that to the extent this Agreement is required to be construed in accordance with the laws of any state that precludes a requirement in an employee agreement to assign certain classes of inventions made by an employee, this paragraph 5 will be interpreted not to apply to any invention which a court rules and/or the Company agrees falls within such classes. I also hereby waive all claims to any moral rights or other special rights which I may have or accrue in any Company-Related Developments.

6. Documents and Other Materials. I will keep and maintain adequate and current records of all Proprietary Information and Company-Related Developments developed by me during my employment, which records will be available to and remain the sole property of the Company at all times.

All files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, program listings, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, whether created by me or others, which come into my custody or

possession, are the exclusive property of the Company to be used by me only in the performance of my duties for the Company. Any property situated on the Company's premises and owned by the Company, including without limitation computers, disks and other storage media, filing cabinets or other work areas, is subject to inspection by the Company at any time with or without notice. In the event of the termination of my employment for any reason, I will deliver to the Company all files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, program listings, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, and other materials of any nature pertaining to the Proprietary Information of the Company and to my work, and will not take or keep in my possession any of the foregoing or any copies.

7. **Enforcement of Intellectual Property Rights.** I will cooperate fully with the Company, both

during and after my employment with the Company, with respect to the procurement, maintenance and enforcement of Intellectual Property Rights in Company-Related Developments. I will sign all papers, including without limitation copyright applications, patent applications, declarations, oaths, assignments of priority rights, and powers of attorney, which the Company may deem necessary or desirable in order to protect its rights and interests in any Company-Related Development. If the Company is unable, after reasonable effort, to secure my signature on any such papers, I hereby irrevocably designate and appoint each officer of the Company as my agent and attorney-in-fact to execute any such papers on my behalf, and to take any and all actions as the Company may deem necessary or desirable in order to protect its rights and interests in any Company-Related Development.

8. Non-Competition and Non-Solicitation. In order to protect the Company's Proprietary Information and good will, during my employment and for a period of [] months following the termination of my employment for any reason, I will not directly or indirectly, whether as owner, partner, shareholder, director, consultant, agent, employee, co-venturer or otherwise, engage, participate or invest in any business activity anywhere in the "Geographic Scope" (as defined below) that (i) manufactures wind turbine blades or wind turbines; (ii) provides field or repair services for wind turbine blades or wind turbines; or (iii) manufactures composites structures or products for the transportation industry; provided that this shall not prohibit any possible investment in publicly traded stock of a company representing less than one percent of the stock of such company. For purposes of this Agreement, Geographic Scope shall mean anywhere in the world, *provided however*, in case that anywhere in the world shall be held invalid, overly broad, unreasonable, or unenforceable in any respect, the Geographic Scope shall be anywhere in the world where the Company conducts business *provided however*, in case that anywhere in the world where the Company conducts business shall be held invalid, overly broad, unreasonable, or unenforceable in any respect, the Geographic Scope shall be anywhere in the United States, *provided however*, in the event anywhere in the United States shall be held invalid, overly broad, unreasonable, or unenforceable in any respect, the Geographic Scope shall be anywhere in the United States where the Company conducts business, *provided however*, in the event anywhere in the United States where the Company conducts business shall be held invalid, overly broad, unreasonable, or unenforceable in any respect, the Geographic Scope shall be anywhere in any state in the United States where I perform or have performed services for the Company. In addition,

during my employment and for a period of twelve (12) months following the termination of my employment for any reason, I will not, directly or indirectly, in any manner, other than for the benefit of the Company, (a) call upon, solicit, divert or take away any of the customers, business or prospective customers of the Company or any of its suppliers, and/or (b) solicit, entice or attempt to persuade any other employee or consultant of the Company to leave the services of the Company for any reason. I acknowledge and agree that if I violate any of the provisions of this paragraph 8, the running of the Restricted Period will be extended by the time during which I engage in such violation(s).

9. Government Contracts. I acknowledge that the Company may have from time to time agreements with other persons or with the United States Government or its agencies that impose obligations or restrictions on the Company regarding inventions made during the course of work under such agreements or regarding the confidential nature of such work. I agree to comply with any such obligations or restrictions upon the direction of the Company. In addition to the rights assigned under paragraph 5, I also assign to the Company (or any of its nominees) all rights which I have or acquired in any Developments, full title to which is required to be in the United States under any contract between the Company and the United States or any of its agencies.

10. **Prior Agreements.** I hereby represent that, except as I have fully disclosed previously in a writing to the Company, a copy of which is attached hereto as Exhibit 2, I am not bound by the terms of any agreement with any previous employer or other party to refrain from using or disclosing any trade secret or confidential or proprietary information in the course of my employment with the Company or to refrain from competing, directly or indirectly, with the business of such previous employer or any other party. I further represent that my performance of all the terms of this Agreement as an employee of the Company and my performance of the terms of any employment agreement I entered into with the Company, does not and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my employment with the Company. I will not disclose to the Company or induce the Company to use any confidential or proprietary information or material belonging to any previous employer or others.

11. **Remedies Upon Breach.** I understand that the restrictions contained in this Agreement are necessary for the protection of the business and

goodwill of the Company and I consider them to be reasonable for such purpose. Any breach of this Agreement is likely to cause the Company substantial and irrevocable damage and therefore, in the event of such breach, the Company, in addition to such other remedies that may be available, will be entitled to specific performance and other injunctive relief. In addition, if a court of competent jurisdiction determines that I violated this Agreement, I agree to reimburse the Company for its legal fees associated with addressing such a breach.

12. Use of Voice, Image and Likeness. I give the Company permission to use my voice, image or likeness, with or without using my name, for the purposes of advertising and promoting the Company, or for other purposes deemed appropriate by the Company in its reasonable discretion, except to the extent expressly prohibited by law.

13. Publications and Public Statements. I will obtain the Company's written approval before publishing or submitting for publication any material that relates to my work at the Company and/or incorporates any Proprietary Information. To ensure that the Company delivers a consistent message about its products, services and operations to the public, and further in recognition that even positive statements may have a detrimental effect on the Company in certain securities transactions and other contexts, any statement about the Company that I create, publish or post during my period of employment and for six (6) months thereafter, on any media accessible by the public, including but not limited to electronic bulletin boards and Internet-based chat rooms, must first be reviewed and approved by an officer of the Company before it is released in the public domain.

14. No Employment Obligation. I understand that this Agreement does not create an obligation on the Company or any other person to continue my employment. I acknowledge that, unless otherwise agreed in a formal written employment agreement signed on behalf of the Company by an authorized officer, my employment with the Company is at will

and therefore may be terminated by the Company or me at any time and for any reason.

15. Survival and Assignment by the Company. I understand that my obligations under this Agreement will continue in accordance with its express terms regardless of any changes in my title, position, duties, salary, compensation or benefits or other terms and conditions of employment. I further understand that my obligations under this Agreement will continue following the termination of my employment regardless of the manner of such termination and will be binding upon my heirs, executors and administrators. The Company will have the right to assign this Agreement to its affiliates, successors and assigns. I expressly consent to be bound by the provisions of this Agreement for the benefit of the Company or any parent, subsidiary or affiliate to whose employ I may be transferred without the necessity that this Agreement be resigned at the time of such transfer.

16. Disclosure to Future Employers. I will provide a copy of this Agreement to any prospective employer, partner or co-venturer prior to entering into an employment, partnership or other business relationship with such person or entity.

17. Severability. In case any provisions (or portions thereof) contained in this Agreement shall, for any reason, be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

18. Interpretation. This Agreement will be deemed to be made and entered into in the State of Arizona, and will in all respects be interpreted, enforced and governed under the laws of the State of Arizona. I hereby agree to

consent to personal jurisdiction of the state and federal courts situated within Maricopa County, Arizona for purposes of enforcing this Agreement, and waive any objection that I might have to personal jurisdiction or venue in those courts.

I UNDERSTAND THAT THIS AGREEMENT AFFECTS IMPORTANT RIGHTS. BY SIGNING BELOW, I CERTIFY THAT I HAVE READ IT CAREFULLY AND AM SATISFIED THAT I UNDERSTAND IT COMPLETELY.

IN WITNESS WHEREOF, the undersigned has executed this agreement as a sealed instrument as of the date set forth below.

Signed: _____

Type or print name: **Name of Executive**

Date: _____

ACTIVE/81000405.2

EXHIBIT 1

To: TPI Composites, Inc. Attn: Human Resources

From: _____

Date: _____

SUBJECT: Prior Inventions

The following is a complete list of all inventions or improvements relevant to the subject matter of my employment by the Company that have been made or conceived or first reduced to practice by me alone or jointly with others prior to my engagement by the Company:

No inventions or improvements

See below:

Additional sheets attached

The following is a list of all patents and patent applications in which I have been named as an inventor:

None

See below:

EXHIBIT 2

To: TPI Composites, Inc. Attn: Human Resources

From: _____

Date: _____

SUBJECT: Prior Agreements

The following is a complete list of all agreements with my previous employers or other parties as specified in paragraph 10:

Second Amended and Restated Non-Employee Director Compensation Policy

The purpose of this Second Amended and Restated Non-Employee Director Compensation Policy (the “Policy”) of TPI Composites, Inc., a Delaware corporation (the “Company”), is to provide a total compensation package that enables the Company to attract and retain, on a long-term basis, high-caliber directors who are not employees or officers of the Company or its subsidiaries (“Outside Directors”). In furtherance of the purpose stated above, all Outside Directors shall be paid compensation for services provided to the Company as set forth below:

I. CASH RETAINERS

- (a) Annual Retainer for Board Membership: \$75,000 for general availability and participation in in-person and telephonic meetings of our Board of Directors (the “Board”).
- (b) Additional Annual Retainers for Committee Membership:

Audit Committee Chairperson:	\$	20,000
Audit Committee member:	\$	10,000
Compensation Committee Chairperson:	\$	12,500
Compensation Committee member:	\$	7,500
Nominating and Corporate Governance Committee Chairperson:	\$	10,000
Nominating and Corporate Governance Committee member:	\$	5,000
Technology Committee Chairperson:	\$	10,000
Technology Committee member:	\$	5,000

- (c) Additional Annual Retainers for Chairperson of the Board: \$125,000 to acknowledge the additional responsibilities and time commitment of the Chairperson role.
- (d) Additional Annual Retainers for Lead Director the Board (if not Chairperson): \$25,000 to acknowledge the additional responsibilities and time commitment of the Lead Director (if not Chairperson) role.

II. EQUITY RETAINERS

All grants of equity retainer awards to Outside Directors pursuant to this Policy will be automatic and nondiscretionary and will be made in accordance with the following provisions:

(a) Value. For purposes of this Policy, “Value” means with respect to (i) any award of stock options the grant date fair value of the option (i.e., Black-Scholes value) determined in accordance with the reasonable assumptions and methodologies employed by the Company for calculating the fair value of options under Accounting Standards Codification 718

“Compensation-Stock Compensation” (“ASC 718”) and (ii) any award of restricted stock or restricted stock units the product of (A) the fair market value of one share of the Company’s common stock on the grant date, and (B) the aggregate number of shares pursuant to such award.

(b)Revisions. The Compensation Committee in its discretion may change and otherwise revise the terms of awards to be granted under this Policy, including, without limitation, the number of shares subject thereto, for awards of the same or different type granted on or after the date the Compensation Committee determines to make any such change or revision.

(c)Sale Event Acceleration. In the event of a Sale Event (as defined in the Company’s Amended and Restated 2015 Stock Option and Incentive Plan, as amended from time to time (the “2015 Plan”), the equity awards granted to Outside Directors pursuant to this Policy shall become 100% vested and/or exercisable.

(d)Initial Grant. Upon initial election to the Board, each new Outside Director will receive an initial, one-time stock option grant of common stock of the Company (the “Initial Grant”), with a Value of \$60,000, an exercise price equal to the closing price of the Company’s common stock on the date of the grant, and a term of ten years, that vests annually (25% per year) over four years; provided, however, that all vesting ceases if the director resigns from our Board or otherwise ceases to serve as a director, unless the Board determines that the circumstances warrant continuation of vesting. This Initial Grant applies to Outside Directors who are first elected to the Board subsequent to the Company’s initial public offering.

(e)Annual Grant. On the date of the Company’s Annual Meeting of Stockholders, each Outside Director who will continue as a member of the Board following such Annual Meeting of Stockholders will receive a grant of restricted stock units on the date of such Annual Meeting of Stockholders (the “Annual Grant”) with a Value of \$115,000, that vests in full on the earlier of (i) the one-year anniversary of the grant date or (ii) the next Annual Meeting of Stockholders; provided, however, that all vesting ceases if the director resigns from our Board or otherwise ceases to serve as a director, unless the Board determines that the circumstances warrant continuation of vesting. If a new Outside Director joins our Board on a date other than the date of the Company’s Annual Meeting of Stockholders, then such Outside Director will be granted a pro-rata portion of the Annual Grant based on the time between such Outside Director’s appointment and the next Annual Meeting of Stockholders, on the first eligible grant date following such Outside Director’s appointment to our Board.

III. EXPENSES

The Company will reimburse all reasonable out-of-pocket expenses incurred by Outside Directors in attending meetings of the Board or any committee thereof.

IV. MAXIMUM ANNUAL COMPENSATION

The aggregate amount of compensation, including both equity compensation and cash compensation, paid to any Outside Director in a calendar year period shall not exceed \$750,000 (or such other limit as may be set forth in Section 3(b) of the 2015 Plan or any similar provision of a successor plan). For this purpose, the “amount” of equity compensation paid in a calendar year shall be determined based on the grant date fair value thereof, as determined in accordance with

ASC 718 or its successor provision, but excluding the impact of estimated forfeitures related to service-based vesting conditions.

V. EFFECTIVE DATE

The Amended and Restated Non-Employee Director Compensation Policy shall become effective as of May 21, 2020.

APPROVED: March 11, 2020

Subsidiaries of Registrant

<u>Name</u>	<u>Jurisdiction of Incorporation/Organization</u>
Composite Solutions, Inc.	Delaware
TPI Inc.	Delaware
TPI Technology, Inc.	Delaware
TPI Arizona, LLC	Delaware
TPI Iowa, LLC	Delaware
TPI China, LLC	Delaware
TPI Composites (Taicang) Company Limited	People's Republic of China
TPI Wind Blade Dafeng Company Limited	People's Republic of China
TPI Mexico, LLC	Delaware
TPI Mexico II, LLC	Delaware
TPI Composites S. de R.L. de C.V.	Mexico
TPI Composites II, S. de R.L. de C.V.	Mexico
TPI Turkey, LLC	Delaware
TPI Kompozit Kanat Sanayi Ve Ticaret A.S.	Turkey
TPI Holdings Switzerland GmbH	Switzerland
TPI Composites India Private Limited	India

Consent of Independent Registered Public Accounting Firm

The Board of Directors
TPI Composites, Inc.:

We consent to the incorporation by reference in the registration statement Nos. 333-212648, 333-216936, 333-223587, 333-230203 and 333-236941 on Form S-8, No. 333-220307 on Form S-3/A and No 333-248952 on Form S-3/ASR of TPI Composites, Inc. of our report dated February 25, 2021, with respect to the consolidated balance sheets of TPI Composites, Inc. as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income (loss), changes in stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes, and the effectiveness of internal control over financial reporting as of December 31, 2020, which report appears in the December 31, 2020 annual report on Form 10-K of TPI Composites, Inc.

Our report contains an explanatory paragraph related to TPI Composites, Inc.'s change in method of accounting for leases as of January 1, 2019 due to the adoption of Accounting Standards Codification Topic 842, *Leases*.

/s/ KPMG LLP

Phoenix, Arizona
February 25, 2021

CERTIFICATION

I, William E. Siwek, certify that:

1. I have reviewed this annual report on Form 10-K of TPI Composites, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 25, 2021

By: /s/ William E. Siwek

William E. Siwek
Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION

I, Bryan R. Schumaker, certify that:

1. I have reviewed this annual report on Form 10-K of TPI Composites, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 25, 2021

By: /s/ Bryan R. Schumaker

Bryan R. Schumaker
Chief Financial Officer
(Principal Financial Officer)

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

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

1. the report on Form 10-K of TPI Composites, Inc. for the fiscal year ended December 31, 2020 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. Section 78m or 78o(d)); and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of TPI Composites, Inc.

Date: February 25, 2021

By: /s/ William E. Siwek

William E. Siwek
Chief Executive Officer
(Principal Executive Officer)

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

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

1. the report on Form 10-K of TPI Composites, Inc. for the fiscal year ended December 31, 2020 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. Section 78m or 78o(d)); and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of TPI Composites, Inc.

Date: February 25, 2021

By: /s/ Bryan R. Schumaker

Bryan R. Schumaker
Chief Financial Officer
(Principal Financial Officer)