Driving the Energy Transition

2022 ESG Report

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Our Vision

To lead the energy transition through advanced technology and innovative solutions.

Our Mission

To deliver innovative and sustainable solutions to decarbonize and electrify the world by expanding the adoption of renewable energy. We accomplish this by cultivating an inclusive culture that attracts, develops, excites, and retains exceptional talent.

Our Core Values

- *Safety*
- *Operational Excellence*
- *Commitment*
- *Integrity*
- *Leadership*

This report provides information regarding the environmental, social, and governance (ESG) efforts of TPI Composites, Inc. (TPI or the Company) (NASDAQ: TPIC) for the 2022 calendar year. We aligned our material topics to the GRI Standards. This report has been prepared in accordance with the GRI Standards. Sustainability reporting is expected to occur on an annual basis. The GRI index is in section 11 of this report. This report also addresses the Sustainability Accounting Standards Board (SASB) standards of Wind Technology & Project Developers and Electrical & Electronic Equipment, which we find relevant to our industry, and the accompanying SASB Disclosures are in section 12 of this report. Additionally, we have prepared Task Force on Climate-Related Financial Disclosures (TCFD) that can be found in section 13 of this report.

DNV, an independent, third-party assurance provider, conducted a limited-level assurance on selected performance indicators within this report, including select SASB Standards and GRI indicators. Assurance details can be found in the Independent Assurance Statement in section 14. All data denoted with a has been externally assured. External assurance has also been provided for our direct economic impacts via our Form 10-K.

Contact Information

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Published: March 28, 2023

2022 Performance Highlights

410,000,000
Potential metric tons of CO_2 reduced from the blades we produced in 2022

38%
Global onshore market share, excluding China

30%
Female representation on our Board of Directors

.19 RIR
We reduced our Recordable Injury Rate by 17% in 2022

$1.76
Billion in net sales in 2022

8,807
Wind blades produced in 2022

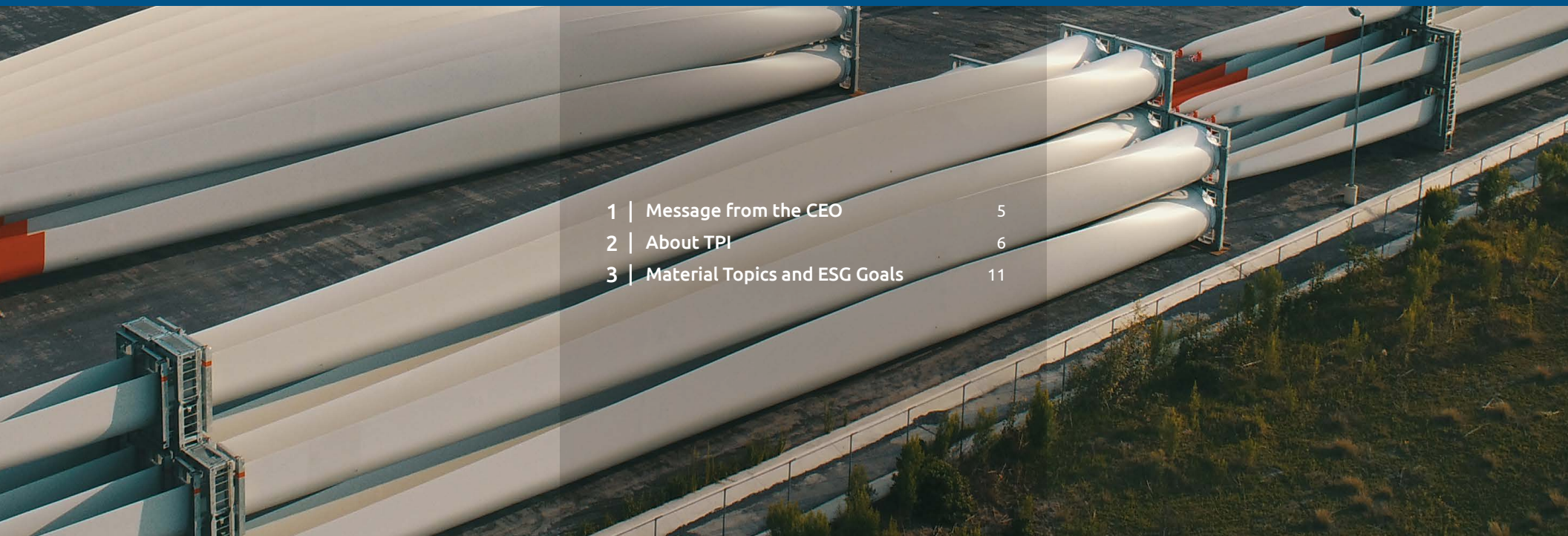
30%
Ethnically diverse persons on Board of Directors

.10 LTIR
We reduced our Lost Time Injury Rate by 23% in 2022

12,634
Megawatts of wind blades produced in 2022

18%
Women on our Global Leadership Team

OVERVIEW



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1 | Message from the CEO

TPI is uniquely positioned and focused on addressing two of the greatest challenges impacting our world today – the global energy crisis and climate change. The geopolitical and macroeconomic events of this past year have underscored the need to accelerate the growth and transition to clean and renewable energy. Governments around the world have taken decisive action through landmark plans and legislation such as REPowerEU and the Green Deal Industrial Plan in Europe and the Inflation Reduction Act in the United States to address these challenges. We believe these initiatives will accelerate the transition to renewable energy and the pace at which we reach net-zero emissions globally.

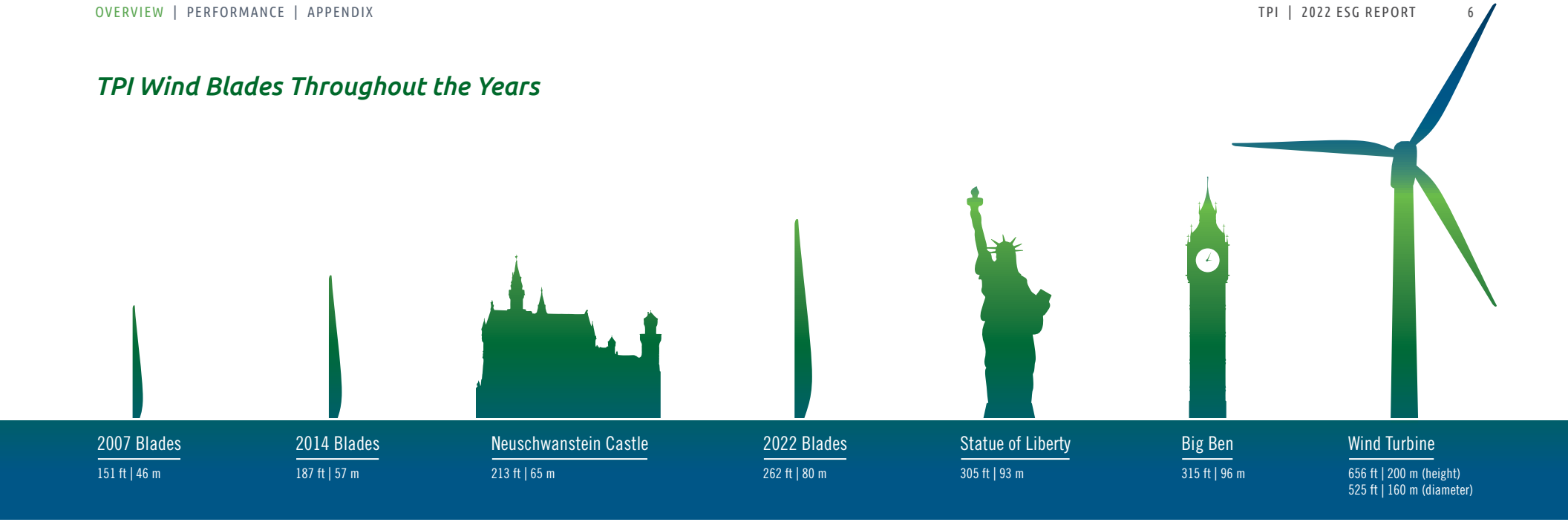
The International Energy Agency expects global wind installs to reach almost 400GW per year in 2030, more than three times larger than in 2022, with the goal of achieving zero emissions by 2050. TPI's mission is to deliver innovative and sustainable solutions to decarbonize and electrify the world by expanding the adoption of renewable energy. We intend to expand our manufacturing output over the next five years and have a significant role in addressing the global energy crisis and climate change. With our focus on decarbonizing and electrifying the world, we strive to set the "ESG Gold Standard." To accomplish this, we have developed long-term ESG goals and continue to make progress toward achieving them. I am proud of our ESG performance and am excited to share our major accomplishments:

- Enhanced our global Behavior-Based Safety (BBS) program to further reinforce positive safety behaviors at all of our facilities
- Transitioned to a new Diversity, Equity, and Inclusion program called IDEA (Inclusion, Diversity, Equity, and Awareness)
- Reached 30% female and 30% ethnically diverse persons on our Board of Directors
- Produced over 8,800 wind blades reaching 38% global onshore market share, excluding China, resulting in 410 million metric tons of CO_2e reduction over the wind turbine blades' 20-year average lifespan
- Achieved our waste rate reduction goal of 5%

We will remain steadfast on the front lines as an industry leader, driving the renewable energy transition forward for years to come.

William E. Siwek
President and CEO

TPI Wind Blades Throughout the Years



2 | About TPI

We are a global company focused on innovative and sustainable solutions to decarbonize and electrify the world. We accounted for approximately 38% of all onshore wind blades on a MW-basis globally, excluding China, in 2022.[1] We reached a record high this year with more than $1.76 billion in net sales including discontinued operations and produced more than 8,800 wind blades. We are enabling many of the industry's leading wind turbine original equipment manufacturers (OEMs) to outsource the manufacturing of a larger portion of their wind blades, thus expanding their global wind blade capacity. We manufacture advanced composite products to our customers' exact specifications in facilities designed, built, and strategically located either near our customers' target markets or in low-cost, world-class locations, to minimize total delivered cost. We have leveraged our global footprint and thousands of capable associates to build a growing global team of experienced technicians to provide best-in-class wind blade service capabilities including preventative services, inspections, repairs, and improvements. We also apply our advanced composite technology and innovation to supply unique, high-strength, lightweight, and durable composite product solutions for automotive markets, including passenger automotive, bus, truck, and delivery vehicle applications.

Associates at a Glance[2]

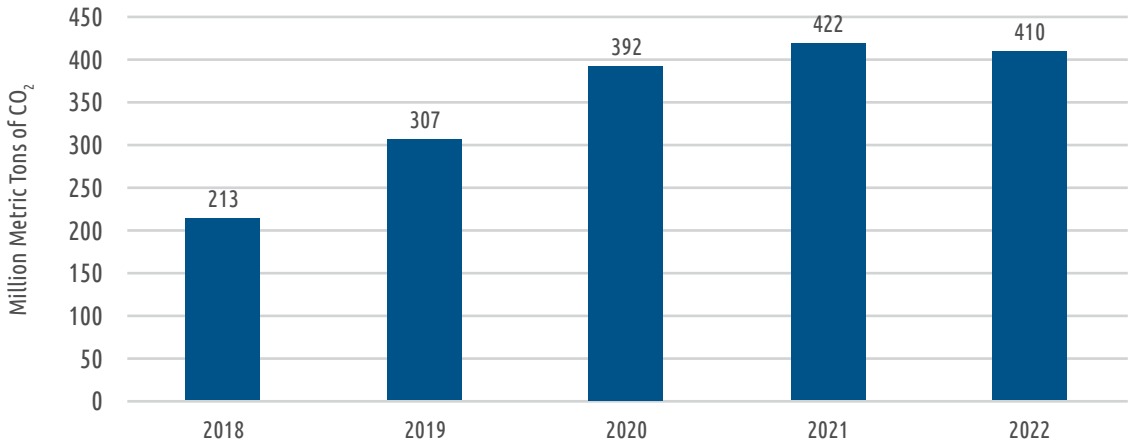
Total
13,622

- Mexico | 6,089
- EMEA | 4,568
- Asia | 1,134
- India | 1,327
- U.S. | 504

[1] 2022 estimated megawatts relative to onshore global megawatts, excluding China, from BloombergNEF and includes TPI's discontinued operations
[2] TPI ceased production operations at our China facilities at the end of 2022, which comprised the entirety of our Asia reporting segment

The wind blades we manufacture support the decarbonization of energy production, provide significant reductions in greenhouse gas (GHG) emissions, and help mitigate climate change. The wind blades that we produced from 2018 to 2022 have the potential to reduce more than 1.7 billion metric tons of CO_2 over their average 20-year life span.[3] This is equivalent to the electricity use of more than 330 million homes in the U.S. for one year.[4]

Estimated CO_2 Reduction from Blades Produced over Entire Product Life by Year Produced

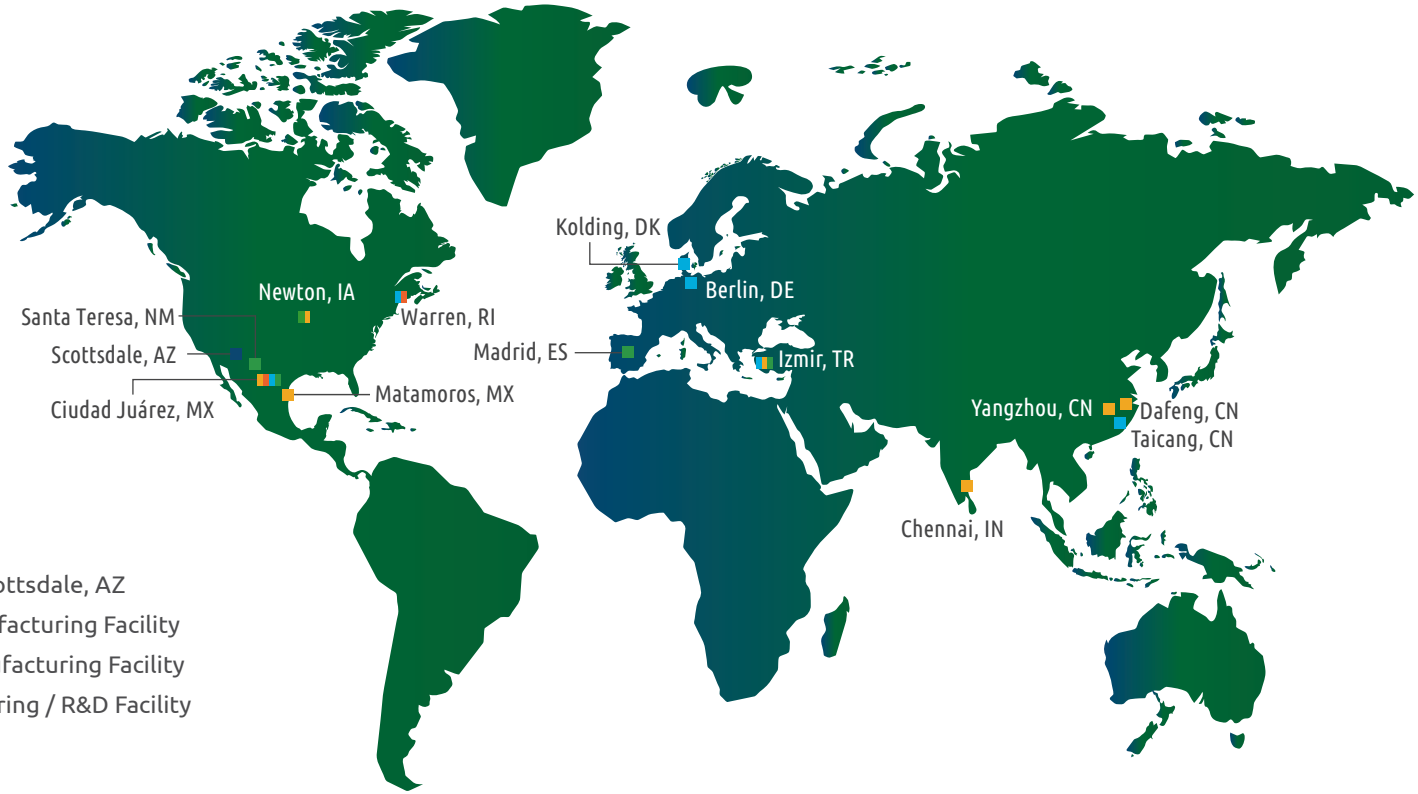


Sustainable Development Goals

To create a shared pathway for a sustainable world, the United Nations adopted the 17 Sustainable Development Goals (SDGs). The SDGs provide specific targets intended for both governments and businesses to track their progress and address a range of topics such as gender equality, affordable and clean energy, and climate action. Our alignment to the SDGs is highlighted to the right and throughout this report.

[3] TPI Produced Estimated MWs x 1000 x Total Lifetime Hours x Estimated Turbine Capacity Factor (DOE/IRENA) x IEA emissions factor of 475 g CO_2/kW
[4] Environmental Protection Agency (EPA). (2022). GHG Equivalencies Calculator

Our Locations



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

By the end of 2022 TPI ceased production operations at our China facilities.

2.1 | Markets

Wind

Wind energy is expected to make up over 30% of electricity generation in 2050 with close to 8,000 gigawatts (GW) installed compared to approximately 830 GW in 2021. This over 9 times increase in installations is a significant opportunity for the wind industry and TPI.[5]

Governments are enacting significant new policies to dramatically increase renewable energy and accelerate emission reduction goals. In the U.S., the Inflation Reduction Act of 2022 was passed with a historic investment in energy and climate change initiatives totaling an estimated $391 billion over 10 years. Specific incentives include the extension of the Production Tax Credit and support of U.S.-based manufacturing of wind energy components through an Advanced Manufacturing Production Tax Credit. In addition, the Infrastructure Investment and Jobs Act includes $550 billion in investments in clean energy transmission and electric vehicle infrastructure, electrifying thousands of school

[5] International Energy Agency World Energy Outlook 2022

and transit buses and creating a new grid deployment authority to support upgrading the electric grid. The long-term commitment made by the U.S. provides policy certainty to the market and supports the growth of wind energy through the coming decade and beyond.

In response to unprecedented challenges facing the European energy supply chain, the European Commission adopted an overarching policy agenda called REPowerEU. The revised targets set by the REPowerEU initiative is intended to drive a total installed capacity for wind energy of 510 GW, up from 190 GW today.[6] Aside from driving the ambitious climate change goals set by EU member countries, this projected increase in wind capacity will further the new priorities in Europe for energy independence, resiliency, and local economic development. The EU is also looking at ways to streamline the permitting process to reduce implementation time for wind projects.

Additionally, China committed to reach carbon neutrality by 2060, and India committed to increase its renewable energy capacity to 500 GW by 2030 and carbon neutrality by 2070. Wind energy continues to play an important role in achieving these ambitious goals.

TPI continues to adapt to the evolving market. We align to our customers long-term strategies, support new product introductions, and provide commercial solutions to deliver the most competitive total delivered cost. Our business model is focused on ensuring TPI remains the preferred supplier to our customers as the demand for wind energy grows.

[6] WindEurope

Automotive

TPI supports the automotive industry's rapid transition to electrification through the composite solutions we produce as part of our automotive business unit. The impacts of climate change over the past year have emphasized the importance of transitioning to electric vehicles to reduce emissions in the automotive sector. Customer demand for electric vehicles in the global market is expected to represent over 17% of new passenger vehicle sales by 2025 as customer incentives, infrastructure, and technology advancements continue to improve.[7] Global policy will also assist in the electrification of the transport sector, as legislation shifts to align with decarbonization. We expect the Inflation Reduction Act to be a demand catalyst in the U.S. for commercial vehicles given the many provisions including the Commercial Clean Vehicle Credit, Alternative Fuel Refueling Property Credit, and the Clean Heavy-Duty Vehicle Program.

Our customer base includes new entrants and established OEMs in the passenger vehicle, commercial vehicle, and transit bus segments. We have established our automotive business unit as a leader in composite solutions, providing our customers with lightweight structures and components that perform better than their metallic alternatives. The composites we manufacture make the vehicles more efficient through weight reduction, and improved corrosion resistance and thermal management.

TPI continues to invest in engineering and capital equipment to drive innovations into the manufacturing processes for our automotive business unit that focus on reducing waste and energy consumption as well as being able to extend our composite solutions for an even wider set of automotive industry applications.

[7] Bloomberg NEF Electric Vehicle Outlook 2022

3 | Material Topics and ESG Goals

We engage with our stakeholders that most impact, or are most impacted by, our business operations. This includes our Board of Directors (Board), associates, customers, investors, asset managers, ESG raters, industry associations, and regulators.

Engagement is necessary for TPI to maintain strong business relationships and ensure that all perspectives are taken into consideration when making decisions. We engage each stakeholder group in a variety of methods including engagement surveys, contractual requirements, focus groups and town halls, customer surveys, earnings calls, and rating organization responses. We also embed stakeholder engagement in our regular operational rhythm by posting information on our website, publishing quarterly and annual financial reports, and conducting targeted stakeholder outreach to receive feedback and help us identify our material ESG topics.

The process to identify our current material topics included three stages:

- **Identifying relevant topics:** Desk research was conducted to account for our third-party stakeholders including ESG rating organizations, industry associations, and regulators to ensure we were capturing their priorities and material topics most important to the wind and automotive industries.
- **Stakeholder engagement:** Throughout the year we meet frequently with our key stakeholders in face-to-face meetings. Additionally, we surveyed our customers, investors, associates, Board of Directors, and senior leadership team, to reassess TPI's ESG impacts by analyzing quantitative survey results and qualitative comments.
- **Prioritization of material topics:** This year, we identified Anti-Corruption as an additional Tier 1 topic which we have now combined with Governance and Ethics.

2022 Material Topics

Environmental	Social	Governance
• Emissions* • Materials and Waste • Environmental Compliance • End of Product Recycling • Energy Management	• Occupational Health and Safety* • Diversity, Equity, and Inclusion* • Labor Management* • Training and Education • Local Communities • Human Rights and Supplier Due Diligence	• Governance and Ethics and Anti-Corruption* • Economic Performance* • Enterprise Risk Management • Procurement Practices/ Materials Sourcing • Indirect Economic Impacts

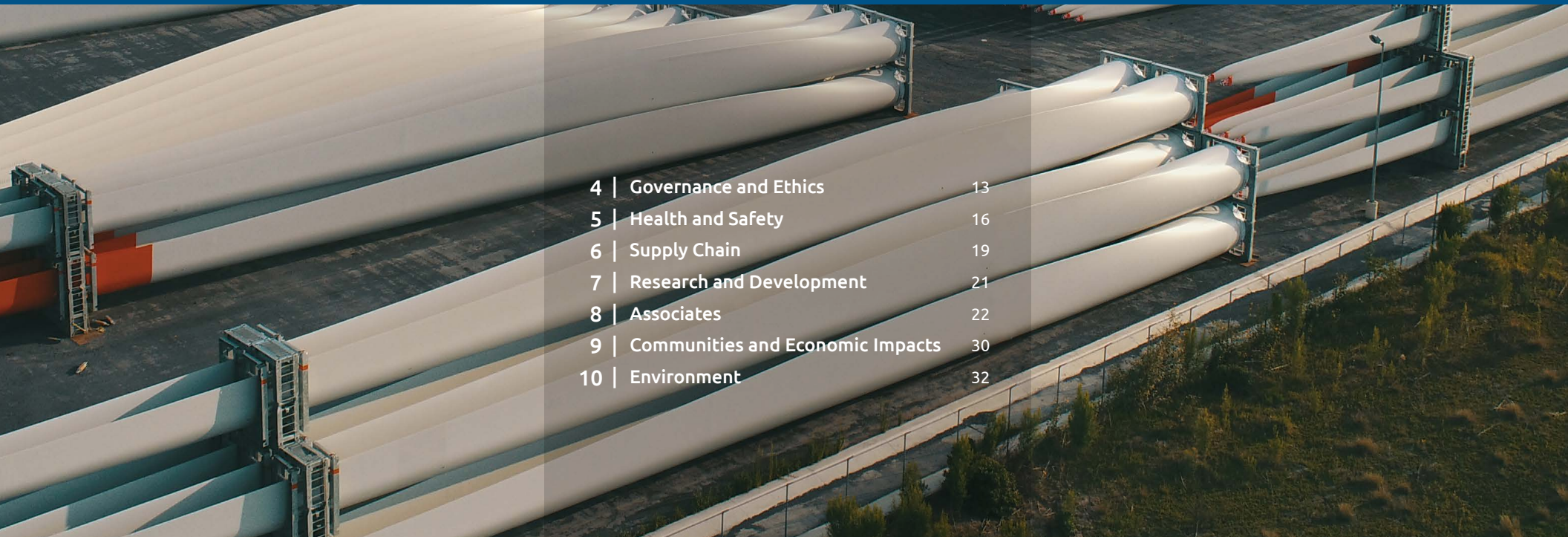
All Board approved topics identified in this table are materially important to internal and/or external stakeholders and are prioritized accordingly. Topics labeled with an asterisk are Tier 1 topics and receive external assurance.

ESG Goals

We have the following long-term ESG goals:

- *Promote a zero-harm culture focused on eliminating unsafe behaviors*
- *Achieve 33% female and 33% racially and ethnically diverse persons on our Board of Directors by the end of 2023*
- *Achieve 25% female representation on our Global Leadership Team by the end of 2025*
- *Achieve 25% racially and ethnically diverse persons on our U.S. Leadership Team by the end of 2025*
- *Become carbon neutral by the end of 2030 with 100% of our energy being procured from renewable sources*

PERFORMANCE



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4 | Governance and Ethics

Integrity is one of our Core Values and it guides our associates while conducting the Company's business and performing our daily activities. TPI operates in multiple regions around the world with different cultural and business norms, yet we follow the highest ethical standards.[8]

Code of Conduct and Anti-Corruption

Our Code of Business Conduct & Ethics (Code) sets the tone regarding ethical behavior and responsible business conduct. The Code covers conflicts of interest, confidentiality, preventing workplace harassment, human rights, and anti-corruption, among others. TPI's Board, in conjunction with its Audit Committee, is responsible for administering the Code, and has delegated day-to-day responsibility for applying and interpreting the Code to TPI's Office of the General Counsel. The Code and our separate Foreign Corrupt Practices Act Policy (FCPA Policy) informs associates on anti-corruption practices and expressly prohibits direct and indirect payments that violate applicable anti-corruption laws.

Compliance Training

Compliance is an important part of TPI's commitment to a strong ethical culture and to protect our reputation as a U.S. publicly traded company with operations around the world. To help achieve this commitment, TPI associates receive annual training on subjects that include our Business Code of Conduct & Ethics, Human Trafficking and Slavery, Foreign Corrupt Practices Act (FCPA), Diversity & Inclusion, Workplace Harassment, Insider Trading, and Cyber Security. TPI's Legal and Compliance teams regularly review and refresh our compliance training needs and requirements in order to help protect TPI's reputation and global operations.

[8] Committee of Sponsoring Organizations (COSO): Internal Control – Integrated Framework (2013), https://www.coso.org/sitepages/internal-control.aspx?web=1

Ethics Reporting

TPI strives to create a working environment with the highest ethical standards for our associates. Our Ethics Reporting, Open Door, and Non-Retaliation Policy ("Ethics Reporting Policy"), outlines numerous avenues to report any policy or ethical violations to TPI, including a recently launched QR Code and mobile device reporting tool. The policy also encourages contact with the Office of the General Counsel, Board of Directors, or Audit Committee if there is an allegation regarding criminal conduct, violations of local laws, bribery or corruption, or financial statement irregularities. In addition, it describes TPI's open-door policy and our commitment to non-retaliation against associates that report concerns.

Associates are encouraged to report all concerns either directly or anonymously, through multiple reporting tools including the Ethics Hotline, which is operated by an independent third-party provider. Associates receive ongoing training and communication about how to report concerns, each TPI location displays posters in the local language on ethics reporting, and the Company's intranet prominently displays reporting tools for associates. Any reports submitted to the Ethics Hotline are only accessible by the Office of the General Counsel and Audit Committee Chairperson in order to protect the reporter's identity. All reports regarding a procedural, ethical, or policy concern are taken seriously and investigated promptly by the human resources department, the internal audit department, the internal legal department, or an external law firm, depending on the nature of the concern. To ensure ethics reporting remains effective, we identify trends in reports received and then implement appropriate action plans such as associate trainings.

TPI takes all allegations of misconduct seriously and investigates claims pursuant to the guidance provided in our Investigation Policy. The Investigation Policy seeks to ensure that all investigations are done in a consistent and impartial manner while in compliance with TPI policies and laws in the countries in which we conduct business.

Human Rights

Respect for human rights is also embedded throughout the culture at TPI. Human rights protections are included within the Code, our supplier code of conduct, and our Human Rights Policy. Our Human Rights Policy highlights TPI's explicit respect for internationally recognized human rights as established in the Universal Declaration on Human Rights and the International Labour Organization's Core Conventions. This includes our commitment to prohibiting forced and child labor, and to promoting workplace safety, freedom of association and collective bargaining, and inclusion, diversity, equity, and awareness (IDEA). We also expect our associates and suppliers to abide by this policy to ensure respect for human rights in all our business dealings.

Board and Executive Oversight

TPI's Board represents our most senior governance body for the Company. Ten members currently sit on the Board. In 2022, we increased the percentage of female members to 30% and ethnically diverse members to 30%. It is our goal to achieve 33% female and ethnically diverse board members by the end of 2023. Members of the Board comprise three committees: the Audit Committee oversees fraud prevention and compliance, the Compensation Committee oversees director and executive compensation, and the Nominating and Governance Committee (NGC) oversees ESG, IDEA, and Board composition. Oversight for our strategies and activities related to ESG matters falls under the responsibilities of the NGC, alongside the leadership team. Our Board delegates responsibility for ESG to our CEO who manages impacts and activities alongside our senior leadership team.

To help align our compensation and ESG strategies, we have developed ESG targets, which are included in our executive compensation plans. These ESG targets include safety enhancement, IDEA, and waste reduction goals.

Board Gender Diversity

30%
Female

Board Ethnic Diversity

30%
Ethnically Diverse

Each facility has developed and implemented action plans, which are measured and reviewed, along with other key operational and financial metrics, by our senior leadership team during our monthly operations meetings with each of our manufacturing locations. We are proud to state we have achieved our 2022 safety enhancement and waste reduction goals.

Enterprise Risk Management

TPI uses an Enterprise Risk Management (ERM) framework to help identify and evaluate risks that may threaten the achievement of our strategic business objectives.

Many of these risks are quantifiable and controllable, but others are external and difficult to predict (e.g., geopolitical uncertainty, global market conditions). Many of our strategic business objectives are centered around traditional business goals such as revenue and profitability but given the nature of our Company in the renewable energy sector, it is imperative we continue to lead and set the "ESG Gold Standard."

We have prioritized our top enterprise risks and developed comprehensive action plans to help mitigate potential impact to our organization. The status of our action plans is monitored regularly by our senior leadership team and is reviewed, at least annually, by our Board.

External Certifications

We have implemented management systems at each of our manufacturing facilities according to the international standards for quality, environment, and health and safety, ISO 9001, ISO 14001, and ISO 45001, respectively. We perform internal audits and have annual third-party surveillance audits performed to maintain our certifications as well as ensure regulatory compliance. We aspire to have all manufacturing facilities certified.

Furthermore, both of our facilities in Türkiye have obtained ISO 50001 (Energy Management) and ISO 27001 (Information Security) certifications. Our Rhode Island and Juarez Automotive facilities have also obtained IATF 16949 (Quality) certification. Rhode Island also obtained ISO/IEC 17025 (Testing Calibration) certification. Our certifications are found on our website.[9]

Additionally, we require our top global raw material suppliers to maintain a Quality Management System (QMS), Quality Assurance (QA), or Product Quality plan compliant with ISO 9001, in accordance with industry standards and TPI's customers' requirements. To ensure compliance, we audit our largest global raw material suppliers to ensure consistency and standardization throughout the value chain; please see section 6 below for more information.

ISO Standard	ISO 9001	ISO 14001	ISO 45001
Certified Facilities	10	9	8

[9] TPI Composites Inc - EHS & Quality Certificates

5 | Health and Safety

At TPI, safety is our number one 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 arrived to work. To do so, we invest in our people by continually improving our global behavior-based safety program to eliminate unsafe behaviors.

We continue to align safety practices across our global facilities and utilize ISO 45001 Certifications to standardize and strengthen our Environmental, Health, and Safety (EHS) Management Systems across our facilities and ensure risks are being addressed.

To ensure that safety behaviors are properly executed, multiple measures are implemented at each facility by our leadership teams and health and safety professionals. These measures include:

- behavior based safety observation program
- EHS action teams
- good-catch safety program
- weekly safety walks
- daily safety communication
- safety education
- safety committees
- shift safety inspections
- COVID-19 response plan

Behavior Based Safety

Our standard global Behavior-Based Safety (BBS) process ensures we provide coaching around at-risk behaviors and reinforce safe behaviors. Our BBS process continues to mature and utilizes a mobile application to capture the data through weekly surveys and enable global trend analysis. The BBS data captured includes the number of observations made by our trained observers and categorizes the observations as safe or unsafe. These observations focus on correct PPE usage, ergonomic postures, equipment handling, and daily blade manufacturing safety procedures. In 2022 our facilities completed more than 23,000 of observations with our average BBS score of 90% safe.

Our associates celebrated 1,000 days without a recordable incident at one of our Mexico facilities.

EHS Action Teams

This year, each of our manufacturing facilities have also deployed EHS Action Teams. EHS Action Teams are small cross-functional teams of associates performing proactive EHS activities to drive continuous improvement. These teams work on projects relating to ergonomics, risk assessment, job safety analysis, and EHS inspections.

Safety Walks

During weekly safety walks, members of the facility leadership team observe operations to identify unsafe conditions and unsafe behaviors while engaging with associates to verify their EHS knowledge and coaches them on observed behaviors.

Safety Education

Safety communication materials are provided to associates and discussed with leadership daily. Topics include recent safety hazards, issues, and training. Furthermore, associates can remove themselves from any situation they view to be hazardous to their health without fear of retaliation. Corrective action to perceived hazards are implemented as appropriate by TPI.

We further ensure the safety of our associates to support our zero-harm culture through safety education. Safety education is the foundation for our other safety measures. Associates receive regular training on environmental, health and safety 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

Safety Committees

Each manufacturing facility has its own safety committee where associates participate in the improvement of their facility's safety management, and meetings are typically held monthly. Committee responsibilities include the review of safety incidents, identification of safety hazards, follow-up on safety improvement action plans and more.

Incident Management

While we employ various preventative safety measures across our operations, we understand that accidents may happen and have processes in place to investigate and prevent future injuries. If an incident occurs, a root cause is identified, and corrective actions are implemented to address the hazard that led to the incident. All safety information is tracked and reviewed at each facility and with the leadership team. Incidents and corrective actions are then shared across facilities, along with significant good-catches, to ensure that best practices are implemented globally. A good-catch is the identification of a condition or behavior that has the potential to cause harm with timely intervention and corrective action before an incident occurs. In 2022, the number of good-catches submitted was more than 24,000.

Additional Health Services

Access non-occupational medical and healthcare services varies across our facilities. These include on site clinics, referral to outside medical services, and private health insurance. Voluntary health promotions also vary between facilities but include preventative wellness checks, fitness and wellness benefits, healthy eating programs and more.

Safety Performance

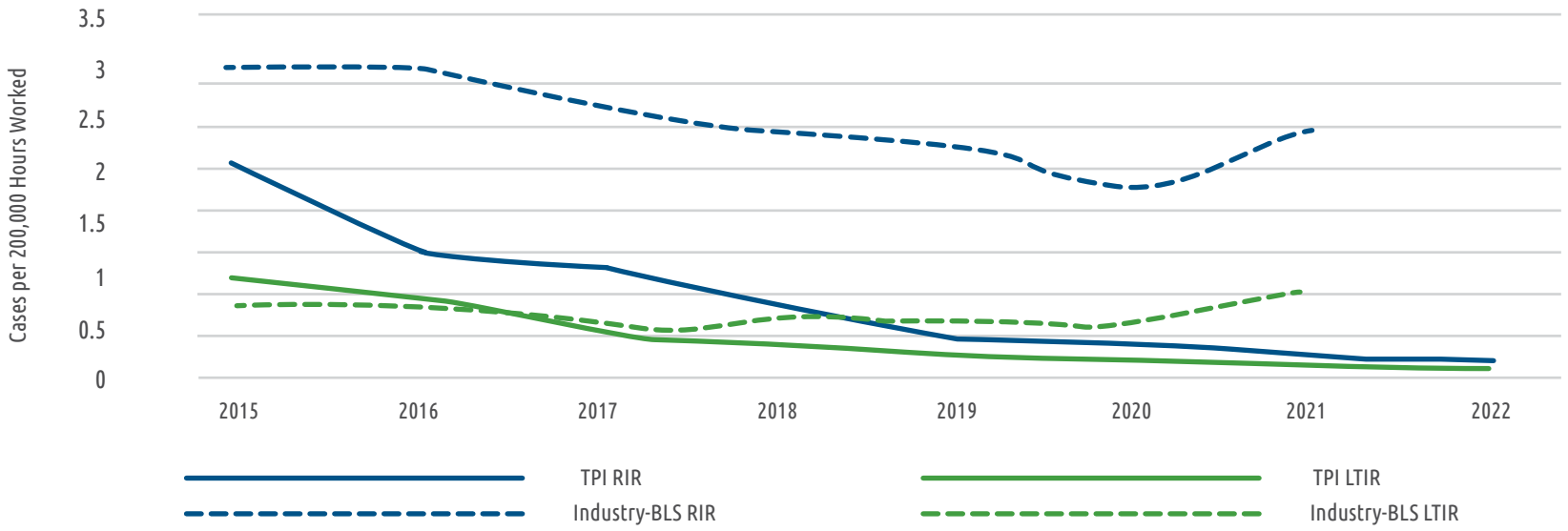
We exceeded our goals for Recordable Incident Rate (RIR) and Lost Time Incident Rate (LTIR) in 2022. Our goal was for the RIR and LTIR to remain flat or decrease year over year. We reduced our RIR by 17% to 0.19 compared to 0.23 in 2021, and we reduced our LTIR by 23% in 2022 to 0.10 compared to 0.13 in 2021. Our 2021 and 2022 RIR and LTIR were significantly below the U.S. Bureau of Labor Statistics industry rates.[10]

[10] Number of incidents per 100 associates. Incident Rate (IR) = Number of Incidents X 200,000 / Number of Associate Labor Hours. Injury frequency rates calculate the number of injuries per year for each 1 million hours worked. Recordable incidents are based on OSHA reporting requirements and exclude first-aid injuries. Injury Frequency Rate (IFR) = Number of Injuries X 1,000,000 / Number of Associate Labor Hours. Industry incident rates are according to the U.S. Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses NAICS code 33361.

Associate Safety	2020	2021	2022
Recordable Injuries (number)	58	38	29
Incident Rate	0.37	0.23	0.19
Injury Frequency Rate	1.82	1.14	0.93
Lost Time Injuries (number)	30	22	16
Incident Rate	0.19	0.13	0.10
Injury Frequency Rate	0.95	0.66	0.51
High Consequence Injuries (number)	5	2	2
Incident Rate	0.03	0.01	0.01
Injury Frequency Rate	0.16	0.06	0.06
Fatal Injuries	0	0	0
Incident Rate	0	0	0
Injury Frequency Rate	0	0	0

Contractor Safety	2020	2021	2022
Recordable Injuries (number)	N/A	1	0
Incident Rate	N/A	0.09	0
Injury Frequency Rate	N/A	0.47	0
Lost Time Injuries (number)	N/A	1	0
Incident Rate	N/A	0.09	0
Injury Frequency Rate	N/A	0.47	0
Fatal Injuries	N/A	0	0
Incident Rate	N/A	0	0
Injury Frequency Rate	N/A	0	0

Recordable and Lost Time Incident Rates[11]



[11] Industry incident rates are according to the U.S. Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses NAICS code 333611

6 | Supply Chain

Suppliers are a critical part of the extended TPI team and work with us every day to meet and exceed the needs of our customers. We count on our suppliers to meet the same high standards for safety, quality, delivery, and cost that we place on ourselves. In addition to upholding TPI's expectations as communicated in our policies and procedures, we actively engage with our suppliers to develop a world-class sustainability program described below.

TPI purchases materials, products, and services to support production across our global manufacturing facilities. The largest category within our global spend is direct raw materials. The primary raw materials are epoxy resins and adhesives, carbon reinforcements, advanced fiberglass fabrics, core materials (balsa wood and foam), coatings, lightning protection systems, and attachment hardware. Our raw material supply chain encompasses over 500 suppliers in more than 25 countries, with a spend of approximately 60% of our net sales including discontinued operations in 2022. We continue to expand our use of local and regional suppliers to ensure a continuous and uninterrupted supply of materials and reduce transportation distance and carbon emissions. During 2022, we audited more than 25 suppliers, approximately 60% of our annual supply spend, on a range of topics important to TPI such as EHS, quality, process control, ESG, and IDEA. We focus our auditing on new suppliers, suppliers that we have not audited in the last three years, or suppliers with operational changes.

Supplier Sustainability Program

One of TPI's top priorities is to improve our ESG opportunities throughout our supply chain. To achieve our ESG goals, we have established a supply chain sustainability program to require and inspire our suppliers to engage with us around sustainability priorities while also increasing transparency.

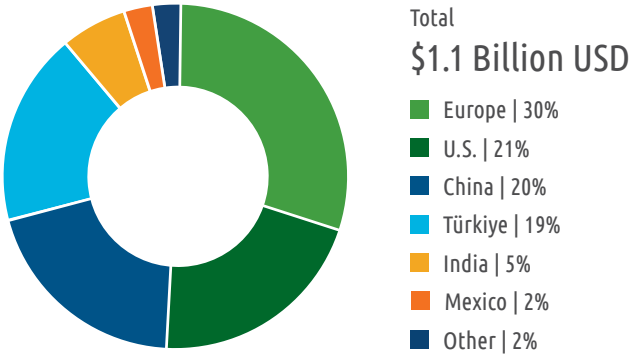
The program consists of three pillars:

1. Develop a clear understanding of sustainability objectives and progress
2. Strengthen and accelerate supplier engagement and sustainability performance
3. Embed sustainability learning and criteria across our supply chain procedures and processes

In 2022, we established the following goals with our top suppliers across key ESG topic areas, including safety, carbon neutrality, waste management, and IDEA:

- **Safety:** Year-over-year reduction of incident rates with a goal and plan to drive towards zero
- **Carbon Neutrality:** Year-over-year reduction of CO_2 emissions with a goal to reach Carbon Neutral by 2030, without use of offsets
- **Waste Management**: Year-over-year reduction of waste to landfill and incineration without energy recovery to reach zero waste by 2040
- **IDEA:** Achieve 25% diversity in leadership and middle management positions inclusive of female and racially and ethnically diverse persons by 2025

Raw Material Supply Chain Spend by Region



Of our 2022 raw material spend, more than half of our critical direct material suppliers have formally committed to TPI's supplier ESG goals.

TPI continues to further integrate ESG criteria into our sourcing and supplier management processes. During the selection process of key suppliers, we evaluate prospective suppliers' response to questionnaires and compliance with ESG criteria. This includes corporate governance structure, management systems, human rights, and safety policies, in addition to the supplier's ESG vision, commitments and objectives. We have also started to track supplier metrics in support of TPI's supplier ESG goals including GHG emissions (scope 1, 2, and 3), total waste generated, renewable and recyclable material content, safety statistics, and associate diversity.

TPI also considers the environmental impact of the materials we source. For example, we prioritize relationships and opportunities with suppliers that have independent certifications for social and environmental standards, such as Forest Stewardship Council (FSC) certifications for balsa wood or more environmentally friendly material alternatives such as water-based coatings.

Human Rights and Supplier Due Diligence

We have implemented policies and procedures to help us evaluate the integrity of our third-party business partners. These policies address areas such as child labor, corruption, and safety which are incorporated into all TPI purchasing documents and are available on our website. We have documented standards for suppliers and monitor performance throughout the supplier lifecycle. We do this by using an independent vendor assessment tool, conducting audits of our suppliers, and including TPI's expectations for compliance and ethical behavior in our Supplier Code of Conduct and Human Rights Policy.

TPI has a continuous supplier monitoring program, which looks for changes in governmental sanctions lists and unfavorable media related to the suppliers. As part of our onboarding process, all new suppliers go through an initial enhanced screening process, and once approved, become part of the continuous

monitoring program. TPI is alerted of high-risk activity, and proactively reviews supplier screenings on a weekly basis. All findings are addressed as quickly as possible to ensure that suppliers meet TPI's expectations.

Additionally, TPI has implemented a third-party due diligence program for anti-bribery/anti-corruption, conflict minerals, and Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) reporting to further improve transparency and traceability within the supply chain.

7 | Research and Development

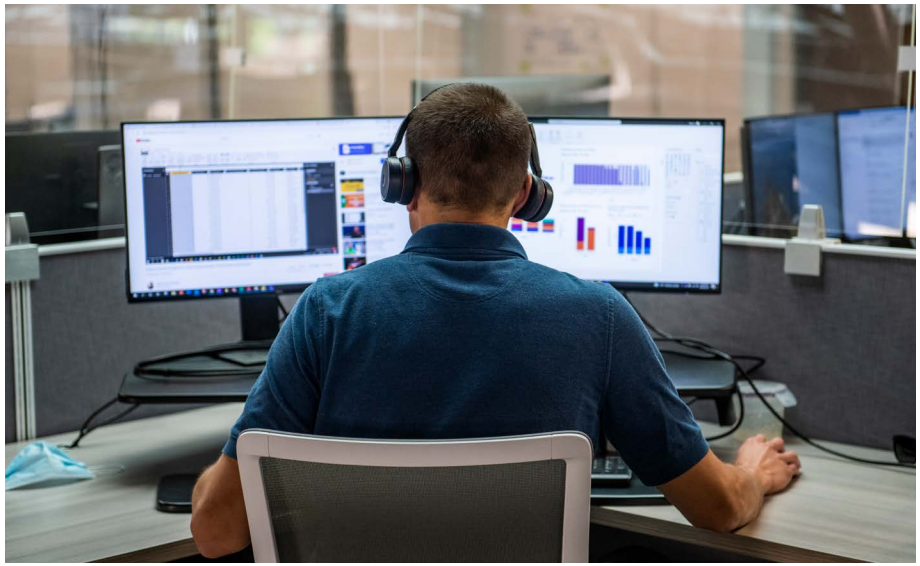
As a leader of composite manufacturing, we conduct research and development (R&D) in close collaboration with our customers, industry consortia, sponsored academic research, and U.S. National Laboratories on the design, development, and deployment of innovative manufacturing materials and processes, including automation, innovative material application, and sophisticated product quality inspection tools. Our R&D efforts place high priority on driving quality through continuous process improvement, while reducing costs across our manufacturing facilities, and expanding our supply chain through cross-qualifying materials and development of both global and local suppliers. We have a broad set of R&D activities including new material technologies, new molding technologies, tooling and assembly operations, and our industry leading activities in model-based manufacturing. These efforts have resulted in an ever-expanding base of intellectual property that includes issue of 44 U.S. and International patents and more than 30 applications pending that support a strong competitive position in the markets we serve.

Wind R&D

The increase of wind power installations is a result of the continuous improvement in turbine capacity factor (CF) which directly impacts the levelized cost of energy (LCOE) from wind. Increasing CF is due, in large part, to increasing rotor diameter meaning longer and more complex wind blade assemblies with increasing risk to both quality and product cost. To address this challenge, TPI has focused much of our wind technology efforts on the emerging field of computer vision and laser measurement with the use of artificial intelligence data processing to provide real-time feedback of key production metrics and collection of historical data. The immediate impact on product quality and cycle-time reduction is now well documented and implementation across global operations is underway.

Automotive R&D

The level of new electric vehicle introductions by both established and new-entry OEMs is driving a need for improved manufacturing efficiency. TPI has developed thermal barriers, structural components, and systems that deliver significant mass reductions and manufacturing efficiencies when compared to their alternative metallic solutions. Our manufacturing capabilities include Compression Molding, Vacuum Assisted Resin Transfer Molding, High Pressure and Light Pressure Resin Transfer Molding, and Pultrusion. Having this full range of capabilities allows us to select the process that best fits the customer's objectives while optimizing material usage, reducing in-process scrap and labor, in a piece cost and investment efficient manner. TPI's composite solutions are highly efficient while delivering real-world performance and environmental benefits.



8 | Associates

Teamwork is essential to our success at TPI. Not only the success of creating a quality product together, but the success of creating a culture where every associate has a true sense of belonging and the opportunity to grow their career. With the diversity we have at our Company, we can leverage the skills, ideas, and solutions our associates bring, to achieve our goals and promote TPI as an employer of choice.

Our associates are at the center of all we do. They are continuously displaying their dedication to the Company and our core values – Safety, Operational Excellence, Commitment, Integrity, and Leadership. Our associates bring these values to life by applying their diverse backgrounds and skill sets to everyday actions, demonstrating high discretionary effort, and embracing our Values in Motion program.

Number of Associates by Category (Headcount)	2020	2021	2022
Direct Labor	10,944	10,208	10,106
Indirect Labor	3,298	3,354	2,950
Administrative	722	576	566
Total	14,964	14,138	13,622

Values IN MOTION

SAFETY OPERATIONAL EXCELLENCE COMMITMENT INTEGRITY LEADERSHIP

The Global Values in Motion Awards have continued to create an opportunity to recognize associates from all around the world for their constant efforts to represent our TPI Core Values in their daily actions. Our regional leadership teams encourage associates of all levels to nominate their peers for going above and beyond and recognizing good behaviors. By including everyone in the nomination process, we are creating a culture of inclusion.

Listening to Our Associates

Creating a positive and enduring associate experience is a key component to building an inclusive culture. Nothing outweighs the importance of our associates and the consistent feedback they provide to help pave the path to the culture we want at TPI. Annually, TPI conducts an engagement survey, providing an anonymous platform for all associates to give feedback. Additionally, we implemented a Continuous Listening strategy, which aims to elicit associate feedback monthly. Through the use of both feedback mechanisms, our aggregated participation rate was 97% and we received more than 97,000 associate comments. By listening more, our leaders can take quicker and more meaningful actions to better engage our associates.

Our leadership team considers associate engagement a top priority and that our action plans are positively impacting our associates. Our engagement strategies directly help reduce associate turnover rates in each country which are at or below their respective geographic averages.

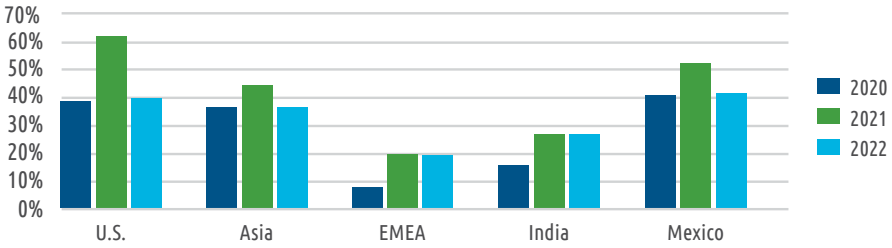
Our regional human resource teams and external partners help ensure we maintain compliance with all current labor standards and strong relationships with our labor unions. At all levels of leadership, we have provided training to foster positive labor relations and develop action plans to address changes as needed.

Our organization's base compensation is established by benchmarking the position to the market median utilizing salary surveys from qualified data sources that provide local, regional, and national data on salaries earned in similar positions to TPI. Regarding additional benefits, all associates are covered either through social programs or TPI in alignment with the market. Additionally, several of our locations provide medical services through on-site doctors, food services through cafeterias, and transportation services to the facilities.

We also provide regular performance feedback throughout the year for our associates, in addition to managing our annual formal performance review process. TPI's Global Leadership Team has variable performance-based components to pay such as annual bonus and equity incentives. In addition, all manager-level associates and above have a variable incentive as part of their annual compensation. All incentive plans include a weighted measurement for safety, sustainability, IDEA, quality, growth, and profitability.

The passion, commitment, and resilience of our associates is critical in helping us achieve our vision to lead the energy transition through advanced technology and innovative solutions.

Total Turnover



New Hires by Age # and %

	Under 30		30-50		Above 50		Total
U.S	60	39%	83	54%	12	8%	155
Asia	212	35%	390	65%	0	0%	602
EMEA	720	57%	544	43%	3	0%	1,267
India	55	57%	42	43%	0	0%	97
Mexico	1,364	54%	1,129	44%	53	2%	2,546
Total	2,411	52%	2,188	47%	68	1%	4,667

New Hires by Gender # and %

	Female		Male		Total
U.S	22	14%	133	86%	155
Asia	35	6%	567	94%	602
EMEA	244	19%	1,023	81%	1,267
India	11	11%	86	89%	97
Mexico	872	34%	1,674	66%	2,546
Total	1,184	25%	3,483	75%	4,667

Turnover by Age # and % Without Impacts

	Under 30		30-50		Above 50		Total	
U.S	62	28%	123	55%	37	17%	222	40%
Asia	152	33%	313	67%	2	0%	467	37%
EMEA	395	45%	471	54%	13	1%	879	20%
India	317	78%	86	21%	4	1%	407	27%
Mexico	1,314	51%	1,172	46%	79	3%	2,565	41%
Total	2,240	49%	2,165	48%	135	3%	4,540	33%

Turnover by Gender # and % Without Impacts

	Female		Male		Total	
U.S	24	11%	198	89%	222	40%
Asia	23	5%	444	95%	467	37%
EMEA	70	8%	809	92%	879	20%
India	31	8%	376	92%	407	27%
Mexico	690	27%	1,875	73%	2,565	41%
Total	838	18%	3,702	82%	4,540	33%

8.1 | Inclusion, Diversity, Equity, and Awareness (IDEA)

As a global business, we have an incredible opportunity to benefit from the diversity we have by creating an inclusive environment for all associates. This year, we embraced a new form of DE&I called IDEA (Inclusion, Diversity, Equity, and Awareness). IDEA starts with inclusion, as we believe to truly value diversity in all forms, we must start by building an environment where everyone feels they can be themselves.

We define these key terms as follows:

- **Inclusion** is the act of creating an environment where everyone feels a sense of belonging and is welcomed, heard, valued, and encouraged to participate fully.
- **Diversity** is all the ways in which people differ, encompassing the characteristics that make an individual or group distinct from another.
- **Equity** is fair treatment, such as providing access to opportunities for advancement and ensuring that everyone feels they can grow in the organization.
- **Awareness** is building an accountable culture of choice, facilitating learning opportunities for all, and celebrating our efforts internally and externally.

We recognize that IDEA is not a destination, but a journey. We are consistently adjusting and adapting IDEA plans to put forth initiatives that are purposeful. We know that by not being intentionally inclusive, we run the risk of being unintentionally exclusive.

We have goals to increase both our overall representation of women in our Global Leadership Team and our overall racial and ethnic diversity of our U.S. leadership team to 25% by the end of 2025. Our global and U.S. leadership, generally, includes leaders at the director level and above. We set a goal to achieve 33% female and ethnically diverse board members by the end of 2023.

TPI established the global IDEA Council and champion network to act as a governing body for our IDEA strategy, initiatives, cultural change efforts, transparency, and accountability. The primary role of the IDEA Council is to connect IDEA initiatives to strategic business goals and outcomes. The IDEA

Council is also a critical driver of organizational change, establishing a dedicated focus on inclusion, diversity, and equity priorities, and managing the IDEA program.

Additionally, all TPI managers receive formal training on inclusive leadership, which focuses on understanding inclusion, diversity, and equity, identifying the characteristics of an inclusive leader, and formulating a personal plan to put these characteristics into action. This year, we took a step further and provided training to all associates to learn about IDEA and identify how they can be more aware of it in their everyday lives. This training was widely accepted, and we will continue to provide it to all new hires. In 2022, over 12,300 of our associates attended and participated in one of these trainings.

In 2023, we will conduct our annual inclusion survey, strengthen supplier diversity programs, and continue to embed IDEA into compensation, performance, and talent practices.

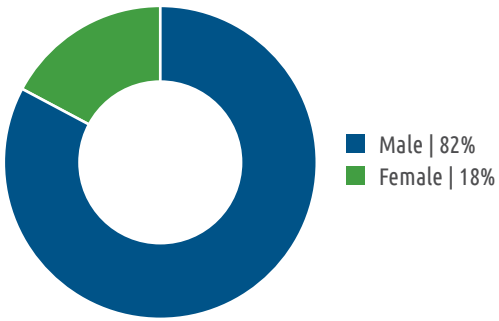
It starts with an IDEA

Associate Category by Age %	Under 30	30-35	Above 50
Direct Labor	41%	54%	4%
Indirect Labor	30%	65%	5%
Administrative	15%	71%	14%
Total	38%	58%	5%

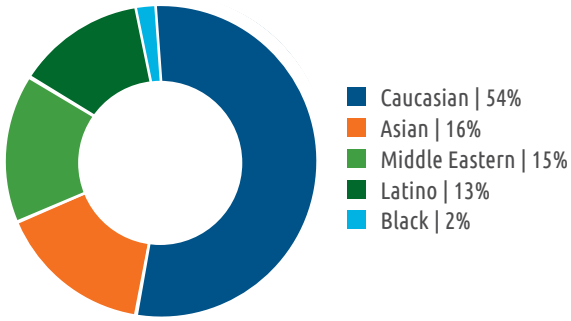
Associate Category by Gender %	Female	Male
Direct Labor	13%	87%
Indirect Labor	14%	86%
Administrative	40%	60%
Total	14%	86%

Associate Category by Ethnicity %	Asian	Black	Latino	Middle Eastern	Caucasian	Other
Direct Labor	17%	0%	47%	34%	1%	0%
Indirect Labor	20%	0%	44%	32%	4%	1%
Administrative	23%	1%	34%	20%	20%	2%
Total	18%	0%	46%	33%	2%	0%

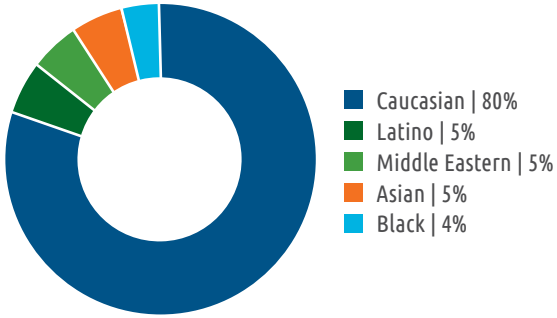
Gender Diversity | Global Leadership Team



Racial/Ethnic Diversity | Global Leadership Team



Racial/Ethnic Diversity | U.S. Leadership Team



2022 IDEA Initiatives

CEO Action for Diversity and Inclusion Business and Individual Commitment

Our CEO, Bill Siwek, renewed the CEO Pledge for Action which aims to create more inclusive workplaces through best practice sharing. In conjunction with the business commitment, TPI also released an individual pledge of commitment for all our associates to voluntarily sign. This pledge is a personal pledge that any individual can take to help drive inclusive behavior in their everyday life. The pledge has five main goals:

1. To check your own biases and take meaningful action to understand and mitigate them.
2. To initiate meaningful, complex, and sometimes difficult, conversations with friends and colleagues.
3. To ask yourself "Do your actions and words reflect the value of inclusion?"
4. To move outside of your comfort zone to learn about the experiences and perspectives of others.
5. To share insights related to what you have learned.

Globally, we had over 2,000 associates electronically sign and pledge to check their biases, speak up for others, and show up for all.

Global Day of Understanding

During the 2022 Global Day of Understanding, our CEO and Chief People Officer hosted global focus groups and spoke with more than 75 associates from around the world in seven different focus group sessions. Our senior leaders also spoke with regional associates in similarly structured conversations.

"I learned a great deal through these conversations – they made me feel proud about our culture and gave us the opportunity to reflect on how we can be more intentional and inclusive in our environment."
—Bill Siwek, President and CEO

LEAP for Women

We continue to create a sense of community with our first Global Associate Resource Group (ARG) LEAP for Women.

LEAP stands for lead, empower, advance, and promote. While regional LEAP for Women champions create an annual action plan of goals, initiatives, and activities they wish to accomplish throughout the year, the ARG also created common global initiatives.

One global initiative that was created by our Mexico team is our Women Who Inspire campaign. This global campaign consists of two components, the TPI Global Women Who Inspire Panels and the Women Who Inspire video series. The TPI Global Women Who Inspire Panels are a series of semi-annual events that aim to inspire women at TPI to share stories about their career, achievements, challenges, and any guidance and knowledge they have received along the way.

The Women Who Inspire videos are created quarterly to recognize and highlight our talented female associates from around the world. These videos are showcased both internally and externally.

Amazing Women of TPI

Furthermore, TPI has proudly supported an annual recognition program for our amazing female associates during the month of March which aligns with International Women's Day and Women's History Month. 2022 marked our seventh year of this recognition program.

"TPI selected outstanding women from around the world to celebrate for our 2022 Amazing Women recognition program. These strong, inspirational women continue to model our TPI Core Values and encourage others to use their voices."
—Deane Ilukowicz, Chief People Officer

2022 IDEA Initiatives

Additional IDEA Initiatives:

- *Expanded IDEA trainings to all associates*
- *Recognized October as global IDEA Month*
- *Featured our Black associates on social media during Black History Month*
- *Celebrated International Women's Day globally with regional initiatives*
- *Hosted volunteer and awareness activities to commemorate Pride Month globally*
- *Raised money for the American Cancer Society in support of National Breast Cancer Awareness Month and our CEO participated in CEOs Against Cancer*
- *Highlighted International Week of the Deaf by producing factual videos in sign language*
- *Volunteered at various locations to support children with developmental disabilities*

"Global IDEA initiatives were designed to further demonstrate our commitment to create an inclusive environment at TPI, embrace our differences, and celebrate unique perspectives."

—Deane Ilukowicz, Chief People Officer

8.2 | Associate Training and Development

Part of our learning culture includes a strong commitment to associate development. TPI offers training to ensure that our associates are not only well-prepared to perform in the role they are hired into, but also invested in development of knowledge, skills, and abilities to enable growth and career progression. Training and development opportunities are offered on a regular basis and include new associate orientation, functional onboarding, safety and compliance training, technical training, and leadership development.

Training data is reported monthly by each manufacturing facility and functional area. Relevant operational indicators are discussed during this period which reflect the effectiveness of our associate training. TPI provided more than 470,000 hours of training, an average of 35 hours per associate, in 2022.

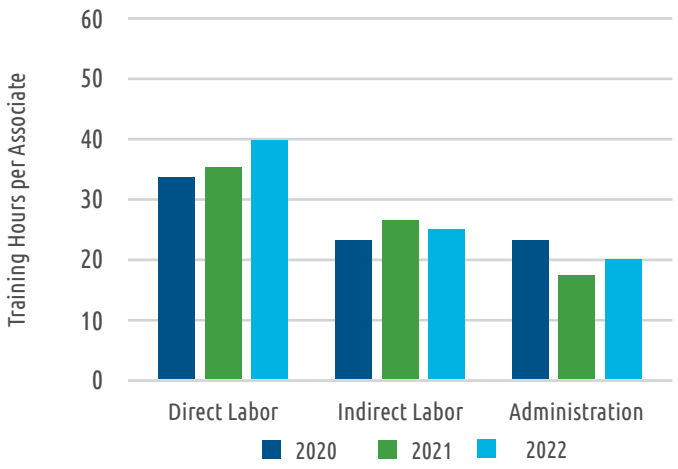
Leadership Development

Leadership development at TPI combines formal learning, individual assessment and development planning, and mentoring. Formal learning is provided at each facility and includes cornerstone skill development such as coaching, situational leadership, and emotional intelligence. In addition, TPI uses competency-based leadership assessments to create personalized individual development plans. Our formal leadership development programs at each operation are uniquely designed around senior, midlevel, and frontline leadership levels, and customized regionally to accommodate and enable cultural differences.

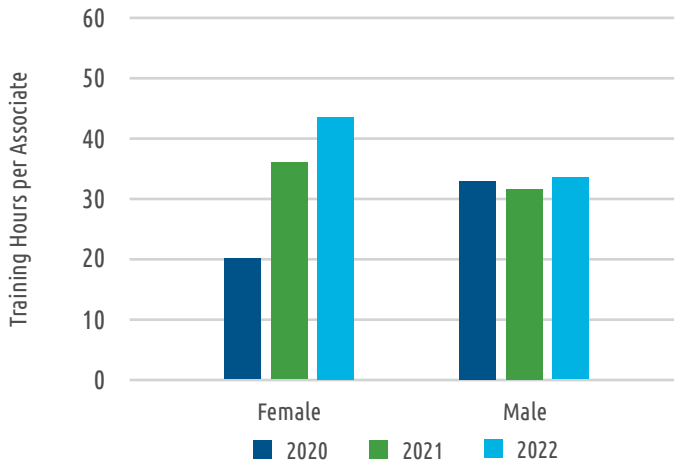
Mentor Programs

TPI continues to foster a culture of development through selective mentor programs. These mentor programs pair associates with management level leaders who meet regularly to help develop skills and competencies in a professional setting. The mentor programs focus on accelerating development for both the mentee and mentor by enhancing skills, promoting cross-organizational relationships, and providing opportunities for professional networking. Mentorships are evaluated on a regular basis to allow participants to share what they learned and provide feedback.

Training Hours per Associate by Category



Training Hours per Associate by Gender



Microlearning

TPI supplements our formal educational training programs with a microlearning platform. We offer short learning modules on topics related to leadership and IDEA. A new focused topic is introduced to our leadership population every week, and our leaders can easily share key learnings with any TPI associate. This year, we had over 2,300 independent course completions using this platform.

TPI Academy is a critical platform for developing our technical talent. TPI Academy continues to expand and incorporate multiple technical disciplines within TPI such as quality and operations. The goal for our engineers and technicians is to use TPI Academy to expand their knowledge of composite technology by learning from our most knowledgeable and experienced technical subject matter experts.

An accelerated learning path helps us lower costs, improve quality, and increase overall operational excellence. These benefits are critical to the long-term success of TPI and provide a unique competitive advantage with respect to our technical competency.

As we look ahead to our 2023 roadmap, we will:

- Continue to offer advanced course modules
- Build out more content at the foundational level
- Create and deliver several self-paced, eLearning modules to address multiple learning styles
- Ensure we have targeted training opportunities available to all technical associates based on their role and experience
- Make progress on our goal to have a culture of learning underpin everything that comes out of TPI Academy

9 | Communities and Economic Impacts

The TPI global community support program continues to provide opportunities for our associates to volunteer through TPI sponsored activities that enhance and serve the communities in which they live and work.

We believe volunteering builds character, provides opportunities to work together, creates a sense of belonging, and increases associate engagement. The volunteer time that TPI associates contribute supports outside organizations that align with our Core Values and occur outside of scheduled work hours unless preapproved. Given the diversity of our locations, we adapt our engagement activities to the needs of the communities. In 2022, our associates completed 18,200 community engagement hours globally. We are immensely proud of the many associates who volunteered to support their local communities.

Community Impact Highlights

We remain both proud and inspired by the dedication our associates display to community support initiatives they are passionate about and highlight some of these activities on the pages below.

Helping Those in Need: Our associates value their neighbors and community members. They provide benefits to their community members through activities that support the elderly, children, those less fortunate, and those with disabilities.

Giving Back: TPI associates enjoy giving back to their communities through donations. This year, our associates held several events where items were collected and distributed to local communities.

Feed My Starving Children

Associates in Arizona participated in a Feed My Starving Children event that packed food for children in need.

School Visits

TPI India organized multiple events for a local school and donated ceiling fans and writing boards.

Blood Drive

In China, associates donated blood to the Red Cross.

Pandemic Response

Associates in TPI Juarez locations donated masks, materials, and meals to a local vaccination center.

Wings for Life

TPI Türkiye participated in the Wings for Life World Run for the Wings for Life Spinal Cord Research Foundation.

Food Donations

Our Rhode Island associates collected food to be donated to a local food pantry.

10 | Environment

Electricity and heat generation accounts for almost one-third of global GHG emissions.[12] It is our vision to lead the energy transition through advanced technology and innovative solutions. In doing so, TPI directly impacts climate change by advancing the decarbonization of the electric sector and supporting the electrification of the vehicle fleet.

Our EHS Policy helps guide all TPI activities to maximize the positive impact that we have on the environment through both the products we manufacture and how we manufacture them. We are committed to protecting our associates, stakeholders, community, and the environment through operating sustainably in compliance with all applicable regulations and standards. We aim to do this by integrating EHS into our business planning and decision making, using our resources more efficiently, empowering our associates with responsibility through training and education, monitoring and managing our EHS performance in alignment with relevant ISO standards, and more.

All our manufacturing facilities have an Environmental Management System (EMS) in place. We have third parties perform annual surveillance audits, and we have nine facilities ISO 14001 certified. We aspire to have all facilities certified.

[12] https://www.wri.org/insights/4-charts-explain-greenhouse-gas-emissions-countries-and-sectors

10.1 | Materials and Waste

Materials

Raw material is the key cost driver of the products we manufacture. We are committed to doing our part in managing our material usage and waste production. We aim to use our materials as efficiently as we can while still meeting the expectations and requirements of our customers. Since the products we build are generally based on our customers' designs, the materials used to build them are generally determined by our customers. We currently track the materials used in our manufacturing processes through our product lifecycle management system and enterprise resource planning system. Approximately one percent of our materials used in 2022 were from renewable resources, balsa wood, and approximately two percent were from recycled sources, polyethylene terephthalate (PET). In addition, all facilities have chemical and hazardous waste management systems in accordance with laws and regulations in their respective regions.

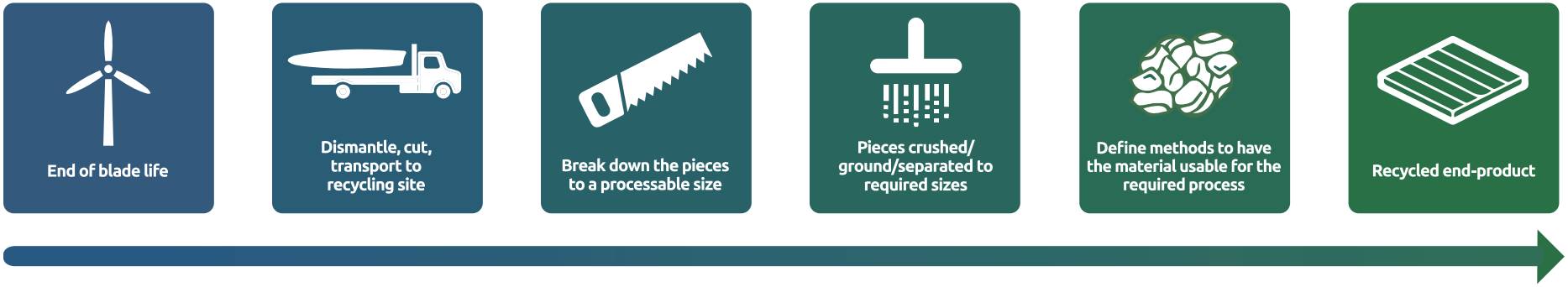
Materials Recycling

Wind turbines are 85% to 90% recyclable, with the wind blade material constituting the remaining percentage that cannot be easily recycled, due to the nature of thermoset composites.[13] Wind and composite industry leaders, such as TPI, are focused on closing this recycling gap in order to reduce landfilling of wind energy waste. TPI is actively working toward creating sustainable end-of-life solutions by developing alternative uses for composite products reaching their end of life. During this past year, we have led numerous projects to convert decommissioned wind blades into a variety of alternative uses including concrete products, recycled fiberglass yarns, construction panels, and structural flooring applications.

In addition to repurposing end-of-life composite products, TPI is working closely with industry and academic leaders to develop and implement solutions to enable circularity for thermoset composites. These solutions will allow for the recovery of high-quality composite materials such as glass fiber, carbon and core which can be reused in building wind blades, and other thermoset composite products.

We remain highly engaged in global efforts to reduce carbon emissions from our manufacturing operations, reduce waste, and implement pathways available for the reuse of as much of the waste we generate as possible.

Blade Recycling



[13] Circular Economy: Blade recycling is a top priority for the wind industry | WindEurope

Waste

Mitigating and managing waste generated from production is a key objective for TPI. Our facilities manage the waste generated according to local regulations. Our waste data is collected monthly using invoices from disposal facilities and haulers. All waste data is verified by on-site EHS supervisors and through annual audits conducted at our ISO 14001 certified facilities. These processes allow TPI to understand the volume and cost of waste produced to ensure waste reduction remains a priority.

We formed waste continuous improvement teams at each location, which completed waste stream analyses and developed waste reduction projects.

In a continuation of our program, in 2022, we achieved our waste rate reduction goal (5% reduction during the year) by focusing our projects on optimizing direct material usage.

This year, we had 59,881 metric tons of waste, of which 9,763 metric tons was hazardous and 50,118 metric tons was nonhazardous waste. Landfilled hazardous waste is disposed of through controlled confinement in a landfill that is lined, monitored, and in compliance with government regulations.

Waste Type[14]		Non-Hazardous (metric tons)			Hazardous (metric tons)			Total (metric tons)		
	Year	2020	2021	2022	2020	2021	2022	2020	2021	2022
Waste diverted from disposal	Recycling	8,828	15,290	17,544	2,442	2,465	2,230	11,270	17,755	19,774
	Composting	1,546	1,642	1,078	0	0	0	1,546	1,642	1,078
Waste directed to disposal	Energy recovery	10,436	6,271	5,064	1,081	4,950	6,714	11,517	11,221	11,778
	Landfill	27,594	29,970	25,614	1,420	1,781	333	29,014	31,751	25,947
	Incineration	3,913	1,986	4	1,509	58	32	5,422	2,044	36
	Other	0	369	813	339	277	454	339	646	1,267
Waste generated	Total	52,317	55,528	50,117	6,791	9,531	9,763	59,108	65,059	59,880

[14] Hazardous waste disposal methods are confirmed by hazardous waste manifests. Non-hazardous waste disposal methods are confirmed based on vendor reports. Waste is reported based on shipment dates from our facilities. The other category includes waste disposed from cafeteria grease traps and using the U.S. EPA H141 code that is stored by the waste vendor and the disposal method is not provided to TPI.

10.2 | Energy and Emissions

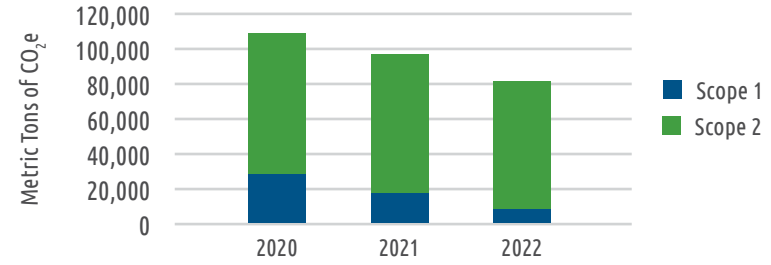
It is our goal to become carbon neutral by the end of 2030 for scope 1 and 2 emissions, with 100% of our energy coming from renewable sources. Our scope 1 emissions are those that we produce on site through fuel combustion and refrigerant usage. Scope 2 emissions are those that we indirectly produce through the direct purchase of electricity and steam. Scope 3 emissions encompass a broader scope of indirect sources, such as purchased goods and services and upstream transportation and distribution.

We are identifying opportunities to reduce our scope 1 emissions by replacing fossil fueled equipment with electric alternatives and our scope 2 emissions by expanding our use of renewable energy resources. For example, we have photovoltaic solar systems installed at several of our locations and are pursuing other renewable sources of energy to power our facilities including wind power.

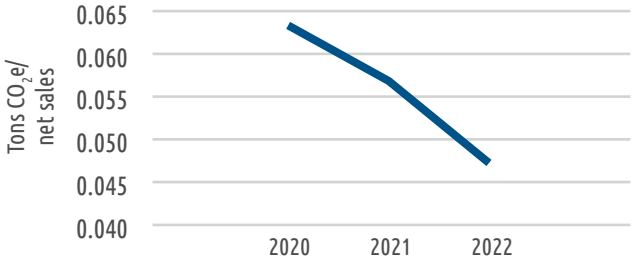
In addition, we are focused on reducing energy usage at our facilities. In 2022, we set a goal to have each of our manufacturing facilities complete at least one energy reduction project for the year. Our associates went above and beyond this goal by completing over 15 energy reduction projects in 2022. Projects completed include eliminating compressed air leaks and improving the efficiency of our lighting systems.

In 2022, our total energy usage was 779,248 gigajoules (GJ). Our total scope 1 and 2 emissions were 80,397 metric tons CO_2e. Total emissions decreased year-over-year primarily because we stopped production at several of our facilities and because our India facility received electricity from the grid instead of diesel generators. We reduced our emissions intensity by approximately 17% year over year[15]. Our scope 3 emissions in 2022 were 1,503,000 metric tons CO_2e.

Emissions



CO_2e Intensity[15]



Energy Type (GJ)	2020	2021	2022
Direct energy (fuel) consumed	378,181	257,324	176,216
Indirect energy consumed – electricity and steam	599,531	630,686	603,032
Total energy consumed	977,712	888,010	779,248
Renewable electricity generated onsite (solar)	1,939	32,489	40,211
Emissions (metric tons CO_2e)	**2020**	**2021**	**2022**
Scope 1	25,137	18,392	9,210
Scope 2 Location Based	78,855	77,444	71,187
Total Scope 1 and 2 Emissions Location Based	103,992	95,386	80,397
Scope 2 Market Based	98,035	92,667	78,383
Total Scope 1 and 2 Emissions Market Based	123,171	111,059	87,593
Total Scope 3 Emissions	N/A	1,661,000	1,503,000

[15] Defined as scope 1 and scope 2 location based emissions divided by annual net sales including discontinued operations excluding field service sales

10.3 | Environmental Compliance

At TPI, we are committed to help safeguard our planet for future generations. Given our global footprint, we operate in locations with varying environmental laws and regulations with the potential to impact our communities. All TPI facilities have an environmental impact assessment performed prior to starting operations of the facility, which includes an evaluation of the land prior to the start of construction. Compliance with environmental laws and regulations are reviewed to mitigate regulatory risk. At TPI we pursue a global EHS practice through which the minimum baseline shall be the most stringent out of applicable local, statutory, or EHS regulations.

Each facility documents applicable environmental regulation as well as compliance requirements for retention of necessary environmental permits and reporting to government agencies. Any updates, changes, or removals of regulatory requirements are also documented. All environmental inspections and instances of non-compliance with environmental laws and regulations are communicated to the leadership team and immediate action is taken to come into compliance.

In 2022, we had zero instances of significant noncompliance.

Biodiversity: In 2022, several of our facilities conducted biodiversity activities in their communities.

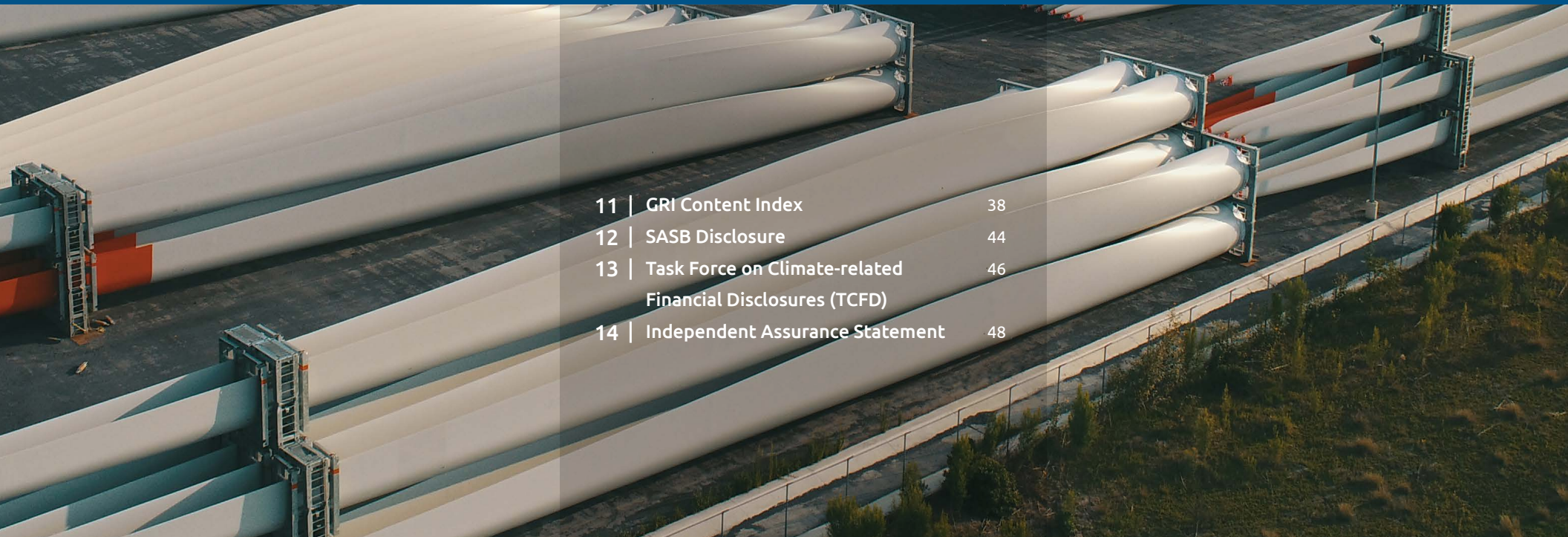
Associates at our Rhode Island facility cleaned up debris from the local wetland.

In Mexico, associates planted trees in local parks.

In China, associates picked up litter in the local community.

Associates in Türkiye hosted a coastal cleanup event.

APPENDIX



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12 | SASB Disclosure 44

13 | Task Force on Climate-related Financial Disclosures (TCFD) 46

14 | Independent Assurance Statement 48

11 | GRI Content Index

Statement of use: TPI Composites has reported in accordance with the GRI Standards for the period January 2022 - December 2022.			
Topic	**Disclosure**	**Location**	**Comment**
GRI 2: General Disclosures 2021			
2-1	Organizational details	2, 8, Global Footprint, Company Overview	Our headquarters is located at 8501 N. Scottsdale Road, Suite 100, Scottsdale, AZ 85253.
2-2	Entities included in the organization's sustainability reporting	10-K	Please refer to the supplemental excel data for this information in Disclosure Boundaries.
2-3	Reporting period, frequency and contact point	2	
2-4	Restatements of information		• In 2021, our total waste data inadvertently excluded one of our manufacturing facilities in Matamoros, Mexico, and had a negligible impact on our total consolidated waste reported. • We identified errors in our 2020 and 2021 reported renewable (GRI301-1) and recyclable (GRI 301-2) materials used and have updated the prior years' renewable/ recyclable values accordingly. Please see the excel supplement for updated data.
2-5	External assurance	48-51	We conducted extensive research into external assurance providers and reviewed our options with the CEO and Board of Directors.
2-6	Activities, value chain and other business relationships	6, 8, 19-20, 10-K	
2-7	Employees		Please refer to the supplemental excel data for this information.
2-8	Workers who are not employees		Please refer to the supplemental excel data for this information.
2-9	Governance structure and composition	14, Proxy, 10-K, Management Team, Board of Directors, Committee Compositions	
2-10	Nomination and selection of the highest governance body	Proxy	
2-11	Chair of the highest governance body	Proxy	

Topic	Disclosure	Location	Comment
2-12	Role of the highest governance body in overseeing the management of impacts	13-15, NGC Committee Charter	
2-13	Delegation of responsibility for managing impacts	13-15	
2-14	Role of the highest governance body in sustainability reporting	13-15, NGC Committee Charter	
2-15	Conflicts of interest	Proxy	
2-16	Communication of critical concerns		All critical matters, if any, are communicated to the NGC committee and the Board at large during quarterly meetings.
2-17	Collective knowledge of the highest governance body	Board of Directors	
2-18	Evaluation of the performance of the highest governance body	Proxy	
2-19	Remuneration policies	Proxy	
2-20	Process to determine remuneration	Proxy	
2-21	Annual total compensation ratio	Proxy	
2-22	Statement on sustainable development strategy	5	
2-23	Policy commitments	13-15	TPI is primarily a manufacturer that relies upon its customers to design and evaluate the environmental impacts of the products TPI produces; however, the precautionary principle is embedded into our ISO 14001 Environmental Management Systems (EMS) at each of our operating locations. Each facility and its EMS is responsible, and supported by the global EHS team, for thinking carefully about the environmental aspects that can be controlled or influenced such as waste reduction, energy consumption, and emissions. Furthermore, each facility conducts operational planning and control to minimize potential negative environmental impacts.
2-24	Embedding policy commitments	13-15	
2-25	Processes to remediate negative impacts	14, 16, 36	
2-26	Mechanisms for seeking advice and raising concerns	13-15	
2-27	Compliance with laws and regulations	13-15, 36	

Topic	Disclosure	Location	Comment
2-28	Membership associations		• American Clean Power Association (ACP) • National Association of Manufacturers (NAM) • Institute for Advanced Composite Manufacturing Innovation (IACMI) • ALLY Energy • WindEurope • WindSTAR University of Massachusetts Lowell • American Council on Renewable Energy (ACORE) • National Association of Corporate Directors (NACD) • Several other region-specific organization memberships
2-29	Approach to stakeholder engagement	11	
2-30	Collective bargaining agreements		Certain of our associates in Türkiye, Matamoros, Mexico and Berlin, Germany are represented by a labor union. 35% of our total associates were covered by a collective labor agreement (CLA) as of December 31, 2022. TPI determines working conditions and terms of employment for our associates based on local regulations and markets to ensure we remain a competitive employer.
GRI 3: Material Topics 2021			
3-1	Process to determine material topics	11	
3-2	List of material topics	11	
3-3	Management of material topics		Please see the corresponding sections for each of our material topics to see our alignment with this standard.
GRI 201: Economic Performance 2016			
3-3	Management of material topics	10-K	We divide our business operations into four geographic operating segments – the U.S., EMEA, India, and Mexico. The consolidated financial statements that can be found in our Form 10-K include the accounts of TPI Composites, Inc., and all majority owned subsidiaries. These financial statements are audited by an external party (KPMG LLP). Further information on how we manage our economic performance can be found in our Form 10-K.
201-1	Direct economic value generated and distributed	10-K	Please refer to the supplemental excel data for this information in Indirect Economic Impacts.

Topic	Disclosure	Location	Comment
GRI 203: Indirect Economic Impacts 2016			
3-3	Management of material topics	31, 36	
203-2	Significant indirect economic impacts	31, 36	Please refer to the supplemental excel data for this information in Indirect Economic Impacts.
GRI 205: Anti-Corruption 2016			
3-3	Management of material topics	13-15, FCPA Policy	
205-1	Operations Assessed for risks related to corruption	13-15	TPI conducts an enterprise-wide fraud risk assessment annually of all its legal entities using a variety of evaluation criteria such as financial, operational, and geographical risk indicators. This risk assessment helps to guide, and or modify, the Company's anti-corruption and anti-bribery policies, procedures, and controls. Please refer to the supplemental excel data for additional information in Anti-Corruption.
205-2	Communication and Training about corruption policies and procedures	13-15	Please refer to the supplemental excel data for this information in Anti-Corruption.
GRI 301: Materials 2016			
3-3	Management of material topics	33	
301-1	Materials used by weight or volume	33	To obtain our material usage by renewable and non-renewable resources for our wind blade and automotive production the weight of renewable materials (balsa wood) used and non-renewable materials per wind blade and automotive products were estimated and multiplied by the number of units produced for 2022.
301-2	Materials used by weight or volume	33	
GRI 302: Energy 2016			
3-3	Management of material topics	35, EHS Policy	
302-1	Energy consumption within the organization	35	The conversion factors used to convert Natural Gas, Diesel, Gasoline, and Electricity into GJ were sourced from the EIA along with their conversion calculators. The conversion factor used for LPG is sourced from EL Gas.
GRI 305: Emissions 2016			
3-3	Management of material topics	35, EHS Policy	
305-1	Direct (Scope 1) GHG emissions	35	Emissions for scope 1 and 2 were calculated based on operational control. Gases included are CO_2, CH_4, and N_2O. The Global Warming Potentials (GWPs) are from the IPCC AR6 and emissions factors are from the U.S. EPA for U.S. facilities and the IEA for our international facilities.
305-2	Indirect (Scope 2) GHG emissions	35	

Topic	Disclosure	Location	Comment
305-3	Other Indirect (Scope 3) emissions	35	The categories for scope 3 emissions included in the calculation are purchased goods and services, direct materials, operations costs, capital goods, fuel and energy-related activities, upstream transportation and distribution, downstream transportation and distribution, waste generated in operations, business travel, employee commuting, processing of sold products, use of sold products, and end of life treatment of sold products. Gases included are CO_2, CH_4, and N_2O. The emission factors used are from the UK Defra, Idemat, EUCIA Eco Impact Calculator, the IEA, the U.S. EPA, and customer developed emissions factors.
305-4	GHG Emissions Intensity	35	Gases included are CO_2, CH_4, and N_2O.
GRI 306: Waste 2020			
3-3	Management of material topics	32-34, EHS Policy	
306-1	Waste generation and significant waste-related impacts	34	
306-2	Management of significant waste-related impacts	32-34	
306-3	Waste generated	34	
306-4	Waste diverted from disposal	34	All waste is transported offsite.
306-5	Waste directed to disposal	34	All disposal methods were conducted offsite.
GRI 307: Environmental Compliance 2016			
3-3	Management of material topics	36, EHS Policy	
307-1	Non-compliance with environmental laws and regulations	36	
GRI 401: Employment 2016			
3-3	Management of material topics	22-23	
401-1	New associate hires and associate turnovers	23	
GRI 402: Labor Management 2016			
3-3	Management of material topics	22-23	
402-1	Minimum notice periods regarding operational changes		At TPI we have a philosophy to communicate what we know, when we know it, in the most thoughtful and engaging way possible. In the event that we have a significant redundancy event in one of our operations we would follow this guiding philosophy. At a minimum, we would strive to provide associates no less than a two-week notice period.

Topic	Disclosure	Location	Comment
GRI 403: Occupational Health and Safety 2012			
3-3	Management of material topics	16-18, EHS Policy, Certifications	
403-1	Occupational health and safety management system	16-18	
403-2	Hazard identification, risk assessment, and incident investigation	16-18	
403-3	Occupational health services	16-18	
403-4	Worker participation, consultation, and communication on occupational health and safety	16-18	
403-5	Worker training on occupational health and safety	16-18	
403-6	Promotion of worker health	16-18	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	16-18	
403-9	Work-related injuries	18	Please note this disclosure covers all facilities, including headquarters. The hierarchy of controls (elimination, substitution, engineering controls, administrative controls, and PPE) is executed through self-correction and leadership implementation. Audits, inspections, and observations are conducted to ensure risks are being addressed.
GRI 404: Training and Education 2016			
3-3	Management of material topics	28-29	
404-1	Average hours of training per year per associate	28	
GRI 405: Diversity and Equal Opportunity 2016			
3-3	Management of material topics	24-25	
405-1	Diversity of governance bodies and associates	14, 25	
GRI 413: Local Communities 2016			
3-3	Management of material topics	30	
413-1	Operations with a local community engagement, impact assessments, and development programs	30-31	Please refer to the supplemental excel data for this information in Community Engagement.

12 | SASB Disclosure – Wind Technology & Project Developers and Electrical & Electronic Equipment[15,16]

Activity Metrics	Category	Unit	Code	Response
Number of produced wind blades[17] Number of units produced by product category	Quantitative	Number	RR-WT-000.A RT-EE-000.A	Wind Blades: 8,807 Automotive: 78,000
Aggregate capacity of delivered wind blades	Quantitative	Megawatts (MW)	RR-WT-000.B	12,634
Number of associates	Quantitative	Number	RT-EE-000.B	13,622
Aggregate capacity of blade contract value	Quantitative	Megawatts (MW)	RR-WT-000.D	This information has been deemed confidential.

Topic	Accounting Metric	Category	Unit of Measure	Code	Response
Energy Management	(1) Total energy consumed (2) percentage grid electricity, (3) percentage renewable	Quantitative	Gigajoules (GJ), Percentage (%)	RT-EE-130a.1	(1) 779,248 GJ (2) 68% (3) 5%
Hazardous Waste Management	(1) Amount of hazardous waste generated, (2) percentage recycled	Quantitative	Metric tons (t), Percentage (%)	RT-EE-150a.1	(1) 9,763 t (2) 23%
	Number and aggregate quantity of reportable spills, quantity recovered	Quantitative	Number, Kilograms (kg)	RT-EE-150a.2	0 kg
Product Safety	Number of recalls issued, total units recalled	Quantitative	Number	RT-EE-250a.1	None
	Total amount of monetary losses as a result of legal proceedings associated with product safety	Quantitative	Reporting Currency	RT-EE-250a.2	None
Workforce Health & Safety	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct associates and (b) contract associates	Quantitative	Rate	RR-WT-320a.1	Please refer to 2022 Performance – Safety table on page 18.

[15] SASB metrics refer to wind turbine information, however, as the products we manufacture are wind blades we adjusted these metrics to reflect this.
[16] Because TPI manufactures wind blades only and not the complete turbine, not all the industry metrics are applicable. These include: RR-WT-410a.1 Average top head mass, RR-WT-410a.2 backlog cancellation associated with community or ecological impacts, RT-WT-440b.2 Average top head mass per turbine capacity, by wind turbine class, RT-EE-410A.1 Percentage of products by revenue that contain IEC 62474 declarable substances and RT-EE-410a.2 Percentage of products by revenue that meet ENERGY STAR® criteria.
[17] We report on the number of wind blades that we have produced rather than delivered.

Topic	Accounting Metric	Category	Unit of Measure	Code	Response
Ecological Impacts of Project Development	Description of efforts to address ecological and community impacts of wind energy production through wind blade design	Discussion and Analysis	N/A	RR-WT-410a.3	Please refer to GRI disclosure 2-23.
Materials Sourcing	Description of efforts to address ecological and community impacts of wind energy production through wind blade design	Discussion and Analysis	N/A	RR-WT-440a.1 RT-EE-440a.1	While the use of critical materials presents no direct critical material risk to TPI's operations, TPI takes material disclosure into consideration for sourcing selection to reduce the risk of regulatory exposure arising from TPI's global sourcing activities. As part of our sourcing and compliance process, TPI requires all raw material suppliers to disclose any use of conflict minerals used directly or indirectly in their own or any sub-suppliers' process. TPI's due diligence measures are further described in its Conflict Minerals Report filed with the U.S. Securities and Exchange Commission.
Materials Efficiency	Top five materials consumed, by weight	Quantitative	Metric tons (tons)	RR-WT-440b.1	Fiber glass: 75,000 tons Resin: 38,000 tons Carbon reinforcements: 13,000 tons Core: 10,000 tons Adhesive: 6,000 tons
	Description of approach to optimize materials efficiency of wind blade design	Discussion and Analysis	N/A	RR-WT-440b.3	TPI is a build to print manufacturer of onshore wind blades, building cost-effective and high-quality wind blades according to our customers' designs. While TPI does not design wind blades or influence the design with consideration of ecological or community impacts for our customers, we do work closely with our customers to implement design changes should such considerations be made. For more information, please refer to page 33.
Business Ethics	Description of policies and practices for prevention of: (1) corruption and bribery	Discussion and Analysis	N/A	RT-EE-510a.1	Please refer to our Governance and Ethics section of this report on page 13.
	Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption	Quantitative	Reporting currency	RT-EE-510a.1	None

13 | Task Force on Climate-related Financial Disclosures (TCFD)

Disclosure Focus Area	Recommended Disclosure	TPI Response
Governance	1a) Describe the boards oversight of climate-related risks and opportunities.	The Nomination and Corporate Governance Committee (NGC) is responsible for overseeing and reviewing the Company's ESG strategy and activities. The NGC meets quarterly and: • Reviews/approves the Company's ESG goals • Monitors the Company's progress toward achieving Committee-approved ESG goals • Evaluates strategic climate-related risks and opportunities For further information refer to the Governance and Ethics section on page 13 of this report.
	Describe management's role in assessing and managing climate-related risks and opportunities.	Given our focus on decarbonizing the electric sector and electrifying the vehicle fleet, our business strategy is aligned to positively impact climate change. TPI's leadership team is actively involved in assessing and managing climate-related risks and opportunities on a day-to-day basis. The details of this process are described in the risk management disclosure below.
Strategy	2a) Describe the climate related risks and opportunities the organization has identified over the short, medium, and long term.	TPI went through a comprehensive study that assessed climate-related risks and opportunities over the short (0-3 years), medium (4-6 years) and long term (7+ years). Through this process we arrived at risks and opportunities material to our business, with the effects of these beginning in the short-term. TPI views our top climate-related risk to be competition – viewed both as competition within the renewable energy sector, such as solar, and from competing technologies, such as carbon sequestration. Additionally, climate change may cause more severe or frequent weather events at our manufacturing facilities. TPI's top climate-related opportunity lies in the shift from higher to lower carbon products, which would create an increased demand of wind blades. Additionally, TPI has the opportunity to access new markets and diversify our business through growing our automotive segment due to increased demand in electric vehicles.
	2b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	TPI fully supports the decarbonization of energy production and the electrification of the vehicle fleet by providing significant reductions in greenhouse gas (GHG) emissions which helps mitigate climate change. TPI is actively addressing the previously mentioned risk within our planning and we are well positioned to pursue the climate-related opportunities identified.
	Describe the resilience of the organization's strategy, taking into consideration the different climate-related scenarios, including a 2 degree C or lower scenario.	TPI considered both a business as usual scenario (IEA Current Policies Scenario) and a 2 degree C scenario (IEA Sustainable Development Scenario) when assessing the resilience of our business strategy. TPI has a robust strategy that is well positioned under either scenario, and our opportunities are significantly accelerated under the 2 degree C scenario.

Disclosure Focus Area	Recommended Disclosure	TPI Response
Risk Management	3a) Describe the organization's processes for identifying and assessing climate related risks.	TPI's leadership team is responsible for assessing and managing climate-related risks and opportunities. To help identify, validate, and assess potential climate-related risks and opportunities, the Company assembled a cross-functional TCFD Taskforce ("Taskforce"). The Taskforce applied a robust methodology and approach, consistent with TCFD leading practices. We evaluated potential climate-related risks and opportunities and finalized our climate-related risks and opportunities as mentioned above. Ongoing updates on the TCFD climate-related risks and opportunities are evaluated, at a minimum, annually as part of the organization's TCFD and Enterprise Risk Management program. For further information refer to the Governance and Ethics section of this report.
	3b) Describe the organization's processes for managing climate-related risks.	
	3c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	
Metrics and Targets	4a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	• Greenhouse gas emissions (scope 1 and 2) • Levelized cost of energy of wind and solar • Annual installed generation capacity of wind and solar
	4b) Disclose scope 1, 2, and, if appropriate, 3 emissions and the related risks.	Please refer to the data table on page 35 for our emissions data.
	4c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	• Carbon neutral by 2030 for scope 1 and 2 emissions, with 100% of our energy coming from renewable sources • Net sales

Independent Assurance Statement

DNV Business Assurance USA, Inc. (DNV) has been commissioned by the management of TPI Composites, Inc. (TPI) to carry out an independent limited level assurance engagement of Selected Information for calendar year 2022. The assurance was carried out from January through March 2023.

Our Conclusion:
Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Selected Information is not fairly stated and has not been prepared, in all material respects, in accordance with the criteria stated. This conclusion relates only to the Selected Information and is to be read in the context of this Assurance Report, in particular, the inherent limitations explained below.

Selected Information In Scope:

The scope and boundary of our work is restricted to the performance indicators included within the Report (the Selected Information) listed below. Data verified for the period January 1, 2022, through December 31, 2022 (except for Business Ethics Training for TPI Board Members which was verified for the period of January 1, 2022 – March 17, 2023).

- Greenhouse Gas Emissions Scope 1 and 2
- Energy Consumption
- Health & Safety
  - Total Recordable Incident Rate (RIR) per 200,000 hours
  - Lost Time Incident Rate (LTIR) per 200,000 hours
  - High Consequence Incident Rate per 200,000 hours
  - Total Fatalities
- Diversity & Inclusion
  - Associates by Category, Location, Age, Gender and Race/Ethnicity
  - Global Leadership by Age, Gender and Race/Ethnicity
  - Board of Directors by Age, Gender and Race/Ethnicity
- Employment
  - New Hires by Gender and Age
  - Turnover by Gender and Age
- Business Ethics - Bribery & Anti-Corruption
  - Monetary losses from legal proceedings
  - Operations assessed for risks
  - Communication of anti-corruption policies and procedures
  - Training on anti-corruption
- International Organization for Standardization (ISO) Certificates
  - Number of certificates - ISO 9001:2015 Quality Management Systems
  - Number of certificates - ISO 14001:2015 Environmental Management Systems
  - Number of certificates - ISO 45001:2018 Occupational Health and Safety Management Systems

Our competence, independence, and quality control

DNV's established policies and procedures are designed to ensure that DNV, its personnel and, where applicable, others are subject to independence requirements (including personnel of other entities of DNV), and to maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals. DNV was not involved in the preparation of any part of TPI's data or report. This is our second year of providing assurance for TPI. We adopt a balanced approach towards all stakeholders when performing our evaluation.

Standards:

- Sustainability Accounting Standards Board (SASB) – Electrical & Electronic Equipment, October 2018
  - RT-EE-130a.1: Energy Management
  - RT-EE-510a.1 (1): Corruption, Bribery - Policies and Prevention Practices
  - RT-EE-510a.2: Monetary Losses (Bribery and Corruption)
- Sustainability Accounting Standards Board (SASB) – Wind Technology & Project Developers, October 2018
  - RR-WT-320a.1: Workforce Health & Safety
- GRI Indicators
  - 205-1: Operations assessed for risks related to corruption
  - 205-2: Communication and training about anti-corruption policies and procedures
  - 302-1: Energy Consumption
  - 305-1: Direct (Scope 1) GHG Emissions; 305-2: Indirect (Scope 2) GHG Emissions
  - 401-1: New Associate Hires and Associate Turnovers
  - 403-9: Work-Related Injuries
  - 405-1: Diversity of Governance Bodies and Associates

We do not express any conclusions on any other information that may be published on TPI's website or Report for the current reporting period or for previous periods.

Scope and Approach:

We performed a **limited level** assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 revised – 'Assurance Engagements other than Audits and Reviews of Historical Financial Information' (revised), issued by the International Auditing and Assurance Standards Board. This standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain limited assurance.

DNV applies its own management standards and compliance policies for quality control, in accordance with ISO/IEC 17021:2015 - Conformity Assessment Requirements for bodies providing audit and certification of management systems, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

The Selected Information has been evaluated against the following reporting criteria:

- World Business Council for Sustainable Development (WBCSD) / World Resources institute (WRI) Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard REVISED EDITION
- Sustainability Accounting Standards Board, Electrical & Electronic Equipment, October 2018
- Sustainability Accounting Standards Board, Wind Technology & Project Developers, October 2018

DNV used a risk-based approach throughout the assurance engagement, concentrating on the areas that we believe are most material for both TPI and its stakeholders. DNV applied a materiality threshold of five percent for the Selected Information.

Responsibilities of TPI and DNV

TPI has sole responsibility for:

- Preparing and presenting the Selected Information in accordance with the criteria
- Designing, implementing, and maintaining effective internal controls over the information and data, resulting in the preparation of the Selected Information that is free from material misstatements
- Measuring and reporting the Selected Information
- Contents and statements contained within the websites

In performing our assurance work, our responsibility is to the management of TPI; however, our assurance report represents our independent opinion and is intended to inform all stakeholders. DNV was not involved in the preparation of any statements or data included in the Report or website except for this Assurance Statement.

Level of Assurance

We are providing a **'limited level'** of assurance. We planned and performed our work to obtain the evidence we considered necessary to provide a basis for our assurance conclusion, so that the risk of this conclusion being in error is reduced but not reduced to very low. A 'reasonable level' of assurance would have required additional work at headquarters and site levels to gain further evidence to support the basis of our assurance conclusion. DNV's assurance engagements are based on the assumption that the data and information provided by the client to us as part of our review have been provided in good faith. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Independent Assurance Statement.

Assurance Team

Lead Verifier Ethics: Natasha D'Silva
Lead Verifiers GHG/Energy: Kyle Silon; Owen Chen
Project Manager/Social Data Verifier: Angela Reed
Technical Reviewer: Karl Song

2022 Selected Information:

The data included within the Report, marked with the symbol in the Report and listed below:

Greenhouse Gas Emissions

▪ Scope 1 Emissions	9,210 MT CO2e
▪ Scope 2 Emissions (Location-Based)	71,187 MT CO2e
▪ Scope 2 Emissions (Market-Based)	78,383 MT CO2e

Energy Consumption

▪ Total Energy Consumption	779,248 GJ

Employee Health & Safety

▪ Total Recordable Incident Rate (RIR) per 200,000 hours	0.19
▪ Total Lost Time Incident Rate (LTIR) per 200,000 hours	0.10
▪ High Consequence Incident Rate per 200,000 hours	0.01
▪ Total Fatalities	0

Contractor Health & Safety

▪ Total Recordable Incident Rate (RIR) per 200,000 hours	0
▪ Total Lost Time Incident Rate (LTIR) per 200,000 hours	0
▪ Total Fatalities	0

Diversity

▪ Total Associates by Category	
○ Direct Labor:	10,106
○ Indirect Labor:	2,950
○ Administrative:	566
○ Global Leadership Team:	107

Diversity continued

▪ Total Associates by Location	U.S. 504 | Asia 1,134 | EMEA 4,568 | India 1,327 | Mexico 6,089
▪ Total Associates by Gender	Female - 14% (1,958) | Male - 86% (11,664)
▪ Total Associates by Age	Under 30 - 38% | 30-50 - 58% | Above 50 - 5%
▪ Total Associates by Ethnicity	Asian - 18% | Black - 0% | Latino - 46% |Middle Eastern - 33% | Caucasian - 2%
▪ Global Leadership by Gender	Female - 18% | Male - 82%
▪ Global Leadership by Age	Under 30 – 0% | 30-50 - 61% | Above 50 - 39%
▪ Global Leadership by Ethnicity	Asian - 16% | Black - 2% | Latino - 13% |Middle Eastern - 15% | Caucasian 54%
▪ Board Age Diversity	Under 30 - 0% | 30-50 - 20% | Above 50 - 80%
▪ Board Gender Diversity	Female - 30% | Male - 70%
▪ Board Ethnic Diversity	Caucasian - 70% | Black - 20% | Asian 10%

Independence

DNV's established policies and procedures are designed to ensure that DNV, its personnel and, where applicable, others are subject to independence requirements (including personnel of other entities of DNV) and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals.

Basis of our conclusion

We are required to plan and perform our work in order to consider the risk of material misstatement of the Selected Information; our work included, but was not restricted to:

- Conducting interviews with TPI's management to obtain an understanding of the key processes, systems and controls in place to generate, aggregate and report the Selected Information
- Performing limited substantive testing on a selective basis of the Selected Information to check that data had been appropriately measured, recorded, collated and reported;
- Reviewing that the evidence, measurements and the scope provided to us by TPI for the Selected Information is prepared in line with the agreed upon procedures and criteria
- Reading the Report and narrative accompanying the Selected Information within it with regard to criteria
- Reviewing global employee rosters at year-end at individual contributor, supervisor/manager, director, and executive leadership levels to determine percent breakdown by gender, ethnic composition, and special populations
- Reviewing recordable incidents, lost time incident, number of employees (direct and indirect labors), hours worked, employee categories (RIR and LTIR)
- Replicating the RIR and LTIR following the reporting criteria below:
    - OSHA Recording and Reporting Occupational Injuries and Illness
- Reviewing sample of recordable incidents and lost time incidents
- Reviewing number of monetary losses as a result of legal proceedings associated with bribery or corruption and communications and trainings related to bribery and corruption.

Employment

Total New Hires by Gender	Female - 25% (1,184) | Male - 75% (3,483)
Total New Hires by Age	Under 30 - 52% | 30-50 - 47% | Above 50 - 1%
Turnover by Gender (without impacts)	Female - 18% | Male - 82%
Turnover by Gender (with impacts)	Female - 18% | Male - 82%
Turnover By Age (without impacts)	Under 30 - 49% | 30-50 - 48% | Above 50 - 3%
Turnover By Age (with impacts)	Under 30 - 45% | 30-50 - 51% | Above 50 - 3%

Ethics

TPI incurred no monetary losses as a result of legal proceedings associated with bribery or corruption	
Percentage of operations assessed for risks related to corruption	100%
Percentage of governance body members that the organization's anti-corruption policies and procedures have been communicated to	100%
Percentage of associates that the organization's anti-corruption policies and procedures have been communicated to	100%
Percentage of governance body members that have received training on anti-corruption	90%
Percentage of associates that have received training on anti-corruption	94%
Percentage of business partners (i.e., global suppliers) that the organization's anti-corruption policies and procedures have been communicated to	82%

ISO Certifications

Number of sites certified - ISO 9001:2015 Quality Management Systems	10
Number of sites certified - ISO 14001:2015 Environmental Management Systems	9
Number of sites certified - ISO 45001:2018 Occupational Health and Safety Management Systems	8

For and on behalf of DNV Business Assurance USA, Inc.

Katy, TX
March 28, 2023

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DNV Assurance Methods

The following methods were applied during the verification of TPI's sustainability data assertions and management processes:

- Review of documentation, data records and sources relating to the corporate sustainability data claims and assertions;
- Review of the processes and tools used to collect, aggregate and report on all sustainability data and metrics;
- Assessment of sustainability information systems and controls, including:
  - Selection and management of all relevant sustainability data and information;
  - Processes for collecting, processing, consolidating, and reporting the relevant sustainability data and information;
  - Design and maintenance of the environmental information system;
  - Systems and processes that support the sustainability information system.
- Performed sample-based audits of the processes for generating, gathering and managing the quantitative and qualitative sustainability data;
- Examination of all relevant sustainability data and information to develop evidence for the assessment of the sustainability claims and assertions made;
- Confirmation of whether the organization conforms to the verification criteria

DNV Business Assurance

DNV Business Assurance is a global provider of certification, verification, assessment and training services, helping customers to build sustainable business performance.
https://www.dnv.com/assurance/

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