Risk Factors Comparison 2024-02-14 to 2023-02-14 Form: 10-K

Legend: New Text ~~Removed Text~~ Unchanged Text Moved Text Section

Our business, financial condition, results of operations, and cash flow can be affected by a number of factors, whether currently known or unknown, including but not limited to those described below. You should carefully read all of the information included in this Report and carefully consider, among other matters, the following risk factors, as well as any discussed under Part II, Item 7 ~~-~~, " Management' s Discussion and Analysis of Financial Condition and Results of Operations. " Although the risks are organized by headings, and each risk is discussed separately, many are interrelated. Moreover, the risks below are not the only risks we face and additional risks not currently known to us or that we presently deem immaterial may emerge or become material at any time. The occurrence of any of the following risks could materially and adversely affect our business, financial condition, results of operations, and cash flow, in which case, the market price of our securities could decline. You should not interpret the disclosure of any risk factor to imply that the risk has not already materialized. Risks related to our business and industry We are dependent on the global steel industry generally and the EAF steel industry in particular, which historically have been highly cyclical, and a downturn in these industries may materially adversely affect our business. We sell our products primarily to the EAF steel production industry. The EAF steel production industry historically has been highly cyclical and is affected significantly by general economic conditions. As a result, we have experienced periods of significant net losses. Significant customers for the steel industry include companies in the automotive, construction, appliance, machinery, equipment and transportation industries, which are industries that were negatively affected by the general economic downturn and the deterioration in financial markets, including severely restricted liquidity and credit availability, in the ~~recent~~ past. Our customers, including major steel producers, have in the past experienced and may again experience downturns or financial distress that could adversely impact our ability to collect our accounts receivable on a timely basis or at all. Pricing for graphite electrodes has historically been cyclical and the price of graphite electrodes may **continue to** decline in the future. Pricing for graphite electrodes has historically been cyclical, reflecting the demand trends of the global EAF steelmaking industry and the supply of graphite electrodes. In addition, as petroleum needle coke reflects a significant percentage of the raw material cost of graphite electrodes, graphite electrodes have historically been priced at a spread to petroleum needle coke, which in the past has increased in tight demand markets. Between ~~2016~~ **2004** and ~~2022~~ **2023**, our weighted- average realized price of graphite electrodes for non- LTAs was approximately $ 6, ~~500~~ **000** per MT (on an inflation - adjusted basis using constant ~~2022~~ **2023** dollars). During the last demand trough in 2016, our weighted- average realized price of graphite electrodes for non- LTAs fell to approximately $ 3, 000 per MT, on an inflation - adjusted basis using constant ~~2022~~ **2023** dollars. Following the significant rationalization of graphite electrode production globally, the resumption of growth in EAF steel production, falling scrap prices, reductions in Chinese steel exports and constrained supply of needle coke, graphite electrode prices reached record highs in 2018. Prices as of December 31, ~~2022~~ **2023** have receded from the highs of 2018, and the price of graphite electrodes may **continue to** decline in the future. Supply and demand normalized in 2019, tipping towards overcapacity that exerts downward pressure on graphite electrode prices, and spot prices fell 25 % during 2019. Spot prices decreased further in 2020, bottoming out in the spring of 2021 before beginning to increase. ~~Despite this increase~~ **However, beginning in 2023**, spot prices **began decreasing given the softer commercial environment. Spot prices** as of December 31, ~~2022~~ **2023** were below our weighted- average contract price for LTA contracted volume. Our business, financial condition and operating results could be materially and adversely affected to the extent prices for graphite electrodes **continue to** decline in the future. Global graphite electrode overcapacity has adversely affected graphite electrode prices in the past, and may adversely affect them again, which could negatively impact our sales, margins and profitability. Overcapacity in the graphite electrode industry has adversely affected pricing in the past and may do so again. An increase in global graphite electrode production capacity that outpaces an increase in demand for graphite electrodes could adversely affect the price of graphite electrodes. ~~We believe worldwide graphite electrode supply will increase in 2023 as a result of Chinese capacity additions.~~ While growth in the ~~Chinese~~ EAF steel market may support some of these capacity additions, the additional graphite electrode capacity may exceed **demand** ~~local Chinese requirements~~. Excess production capacity may result in manufacturers producing and exporting electrodes at prices that are lower than prevailing domestic prices, and sometimes at or below their cost of production. Excessive imports into the Americas and EMEA, which markets collectively made up ~~91~~ **89** % of our net sales for the year ended December 31, ~~2022~~ **2023**, can also exert downward pressure on graphite electrode prices, which negatively affects our sales, margins and profitability. The graphite industry is highly competitive. Our market share, net sales or net income could decline due to vigorous price and other competition. Competition in the graphite industry (other than, generally, with respect to new products) is based primarily on price, **quality / performance, local presence,** product **portfolio** ~~differentiation and quality~~, delivery reliability and customer service. Graphite electrodes, in particular, are subject to rigorous price competition. Competition with respect to new products is, and is expected to continue to be, based primarily on price, performance and cost effectiveness, customer service and product innovation. Competition could prevent implementation of price increases, require price reductions or require increased spending on R & D, marketing and sales that could adversely affect us. In such a competitive market, changes in market conditions, including customer demand and technological development, as well as increased exports by Chinese EAF steel suppliers could adversely affect our competitiveness, sales and / or profitability. We are dependent on the supply of petroleum needle coke. Our results of operations could deteriorate if disruptions in the supply of petroleum needle coke occur for an extended period. Petroleum needle coke is our key raw material used in the production of graphite electrodes. **At full operating levels,** Seadrift ~~currently~~ provides ~~the majority~~ **a substantial portion** of our ~~current~~ petroleum needle coke requirements, ~~and we~~ **with third**

party ~~purchase~~ **purchases making up** the **balance** ~~remainder from external sources, as necessary~~ . **A** ~~As a result, a~~ disruption in Seadrift' s production of petroleum needle coke could adversely affect our results of operations if we are forced to purchase petroleum needle coke from external sources at a higher cost. ~~If a market shortage of petroleum needle coke occurs, we may be unable to acquire sufficient amounts of petroleum needle coke from external sources to support our needle coke requirements currently used in the production of graphite electrodes for sale in the spot market. As a result, a disruption in the supply of petroleum needle coke could have a material adverse effect on our business, financial condition, results of operations and cash flows.~~ We ~~are relying~~ **rely primarily** on one facility in Monterrey, Mexico for the manufacturing of connecting pins, a necessary component of our graphite electrodes. Our results of operations could deteriorate if this facility would become unable to provide us with **the required volume of** connecting pins ~~and required volume~~ . We manufacture graphite connecting pins, which are used by customers to connect and fasten graphite electrodes together in a column for use in an EAF. For the past several years, all of our connecting pin production was performed at our Monterrey, Mexico facility. **While** ~~As a result,~~ we ~~are currently reliant~~ **have added capability at our Pamplona, Spain facility, we primarily rely** on one production location for this critical component. ~~On September 15, 2022, inspectors from the State Attorney' s Office for the Environment of the State of Nuevo León, Mexico visited GrafTech Mexico, S. A. de C. V.' s (" GrafTech Mexico," a subsidiary of the Company) graphite electrode manufacturing facility located in Monterrey, Mexico to inspect GrafTech Mexico' s facility and certain of the facility' s environmental and operating permits. At the conclusion of the inspection, the inspectors issued a Record of Inspection providing for the results of the inspection, their observations, and the imposition of a temporary suspension of GrafTech Mexico' s facilities within seven days. As a result of the temporary suspension of our operations, our production volume was adversely affected in 2022 and our sales volume will be adversely affected in the first half of 2023. Although the temporary suspension of operations was conditionally lifted on November 17, 2022, subject to the completion of certain agreed- upon activities, including the submission of an environmental impact study with respect to the facility' s operations, we are pursuing alternatives with respect to the production and sourcing of connecting pins to reduce our reliance on one production location.~~ If our Monterrey, Mexico facility were to become unable to continue to provide us with connecting pins in required volumes, at suitable quality levels, or in a cost- effective manner, we would be required to **shift production to our Pamplona, Spain facility or** identify and obtain **additional** replacement manufacturing sources. There is no assurance that we would be able to obtain acceptable alternative sources on a cost- effective or timely basis, or at all. An extended interruption in the supply of connecting pins would result in the loss of sales, which could have a material adverse effect on our business, financial condition or operating results. We are dependent on supplies of raw materials (in addition to petroleum needle coke). Our results of operations could deteriorate if those supplies increase in cost or are substantially disrupted for an extended period. We purchase raw materials from a variety of sources. In many cases, we purchase them under short - term contracts or on the spot market, in each case at fluctuating prices. The availability and price of raw materials may be subject to curtailment or change due to: • limitations, which may be imposed under new legislation or regulation; • suppliers' allocations to meet demand from other purchasers during periods of shortage; • interruptions or terminations in production by suppliers; and • market and other events and conditions. Petroleum and coal products, including decant oil and coal tar pitch, which are our principal raw materials other than petroleum needle coke, and energy, have been subject to significant price fluctuations. For example, Seadrift may not always be able to obtain an adequate quantity of suitable low - sulfur decant oil for the manufacture of petroleum needle coke, and capital may not be available to install equipment to allow use of higher sulfur decant oil (which is more readily available in the United States) if supplies of low - sulfur decant oil become more limited in the future. Further, low- sulfur emissions regulations adopted in 2020 by the International Maritime Organization have at times negatively affected pricing for low- sulfur decant oil and they may again in the future cause similar adverse impacts. We have in the past entered into, and may continue in the future to enter into, derivative contracts and short - duration fixed- rate purchase contracts to effectively fix a portion of our exposure to certain products. These hedging strategies may not be available or successful in eliminating our exposure. A substantial increase in raw material prices that cannot be mitigated or passed on to customers or a continued interruption in supply, particularly in the supply of decant oil, would have a material adverse effect on our business, financial condition, results of operations or cash flows. These hedges may be insufficient or ineffective in protecting against the impact of these fluctuations. Our business and our customers are subject to market changes in the availability and cost of electricity and natural gas that could adversely affect our business. We are in an energy intensive industry that requires both natural gas and electricity in our manufacturing process. We primarily rely on third parties for the supply of our energy resources consumed in the manufacture of our products. The prices for and availability of third- party electricity and natural gas are subject to volatile market conditions, particularly in Europe. These market conditions often are affected by factors beyond our control and we may be unable to raise the price of our products to mitigate the effects of increased energy costs in our manufacturing processes. In addition, our customers are subject to these same market conditions **. Failure to retain our existing senior management team or the inability to attract** and ~~some~~ **retain qualified personnel could hurt our business and inhibit our ability to operate and grow successfully. Our success will continue to depend to a significant extent on the continued service of our executive management team and the ability to recruit** , ~~particularly~~ **hire and retain other key management and plant operating personnel, including factory and production workers and other staff to support our growth and operational initiatives and replace** those ~~located in Europe, have chosen~~ **who retire or resign. Failure** to ~~idle~~ **retain our leadership team and workforce and to attract and retain** ~~their~~ **other important management and technical personnel could place a constraint on our global growth and operational initiatives, possibly resulting in inefficient and ineffective management and** operations **, which would likely harm our revenues,** ~~due to the costs of electricity in Europe. The idling of~~ operations ~~by our customers will~~ **and product development efforts and eventually result in a** decrease **in profitability** ~~the demand for our graphite electrodes and could materially adversely affect our business, results of operations, financial condition and cash flows~~ . Our operations are subject to hazards which could result in significant liability to us. Our operations are subject to hazards associated with manufacturing and the related use, storage, transportation and disposal of raw materials, products and wastes. These hazards include explosions, fires, severe weather (including but not limited to hurricanes or other adverse weather that may be increasing as a result of climate change) and natural disasters, industrial accidents, mechanical failures, discharges or releases of toxic or hazardous substances or gases, transportation interruptions, human error and terrorist activities. These hazards can cause personal injury and loss of life, severe damage to or destruction of property and equipment as well as environmental damage, and may result in suspension of operations and the imposition of civil and criminal liabilities, including penalties and damage awards. While we believe our insurance policies are in accordance with customary industry practices, such insurance may not cover all risks associated with the hazards of our business and is subject to limitations, including deductibles and maximum liabilities covered. We may incur losses beyond the limits, or outside the coverage, of our insurance policies. In the future, we may not be able to obtain coverage at current levels, and our premiums may increase significantly on coverage that we maintain. Costs associated with unanticipated events in excess of our insurance coverage could have a material adverse effect on our business, competitive or financial position or our ongoing results of operations. We are subject to a variety of legal, economic, social and political risks associated with our substantial operations in multiple countries, which could have a material adverse effect on our financial and business operations. A substantial majority of our net sales are derived from sales outside the United States, and a majority of our operations and our property, plant and equipment and other long - lived assets are located outside the United States. As a result, we are subject to risks associated with operating in multiple countries, including: • currency fluctuations and devaluations in currency exchange rates, including impacts of transactions in various currencies, translation of various currencies into dollars for U. S. reporting and financial covenant compliance purposes, and impacts on results of operations due to the fact that the costs of our non - U. S. operations are primarily incurred in local currencies while their products are primarily sold in dollars and euros; • imposition of or increase in customs duties and other tariffs **or the loss of the protection thereof** ; • imposition of or increases in currency exchange controls, including imposition of or increases in limitations on conversion of various currencies into dollars, euros, or other currencies, making of intercompany loans by subsidiaries or remittance of dividends, interest or principal payments or other payments by subsidiaries; • imposition of or increases in revenue, income or earnings taxes and ~~withholding~~ **withholdings** and other taxes on remittances and other payments by subsidiaries; • inflation, deflation and stagflation in any country in which we have a manufacturing facility; • imposition of or increases in investment or trade restrictions by the United States or other jurisdictions or trade sanctions adopted by the United States; • compliance with laws on anti- corruption, export controls, customs, sanctions **, environmental** and other laws governing our operations, including in challenging jurisdictions; • inability to determine or satisfy legal requirements, effectively enforce contract or legal rights, including our rights under our LTAs and intellectual property rights, and obtain complete financial or other information under local legal, judicial, regulatory, disclosure and other systems; and • nationalization or expropriation of assets, and other risks that could result from a change in government or government policy, or from other political, social or economic instability. Any of these risks could have a material adverse effect on our business, financial condition, results of operations or cash flows, and we may not be able to mitigate these effects. Our results of operations could deteriorate if our manufacturing operations were substantially disrupted for an extended period for any reason, including equipment failure, legal proceedings, climate change, natural disasters, public health crises, political crises or other catastrophic events. Our manufacturing operations are subject to disruption due to equipment failure, extreme weather conditions, floods, hurricanes and tropical storms and similar events, major industrial accidents, including fires or explosions, cybersecurity attacks, strikes and lockouts, adoption of new laws or regulations, changes in interpretations of existing laws or regulations or changes in governmental enforcement policies, civil disruption, riots, terrorist attacks, war, public health crises, such as the COVID- 19 pandemic, and other events. These events may also impact the operations of one or more of our suppliers. For example, the potential physical impacts of climate change on our operations are uncertain and will likely be particular to the geographic circumstances. These physical impacts may include changes in rainfall and storm patterns, shortages of water or other natural resources, changing sea levels, and changing global average temperatures. For instance, our Seadrift facility in Texas and our Calais facility in France are located in geographic areas less than 50 feet above sea level. As a result, any future rising sea levels could have an adverse impact on their operations and on their suppliers. In the event manufacturing operations are substantially disrupted at one of our primary operating facilities, such as the ~~recent~~ **September 2022** temporary suspension of our operations located in Monterrey, Mexico, we may not have the ability to increase production at our remaining operating facilities in order to compensate without considerable time and expense. To the extent any of these events occur, our business, financial condition and operating results could be materially and adversely affected. Plant operational improvements may be delayed or may not achieve the expected benefits. Our ability to complete future operational improvements ~~, including the reactivation of the remaining production activities in St. Marys (forming, extrusion and impregnation),~~ may be delayed, interrupted or otherwise limited by the need to obtain environmental and other regulatory approvals, unexpected cost increases **, financial constraints** , availability of labor and materials, unforeseen hazards such as weather conditions, and other risks customarily associated with construction projects. Moreover, the costs of these activities could have a negative impact on our results of operations. In addition, these operational improvements may not achieve the expected benefits as a result of changes in market conditions, raw material shortages or other unforeseen contingencies. We depend on third parties for certain construction, maintenance, engineering, transportation, warehousing and logistics services. We contract with third parties for certain services relating to the design, construction and maintenance of various components of our production facilities and other systems. If these third parties fail to comply with their obligations, the facilities may not operate as intended, which may result in delays in the production of our products and materially adversely affect our ability to meet our production targets and satisfy customer requirements or we may be required to recognize impairment charges. In addition, production delays could cause us to miss deliveries and breach our contracts, which could damage our relationships with our customers and subject us to claims for damages under our contracts. Any of these events could have a material adverse effect on our business, financial condition, results of operations or cash flows. We also rely primarily on third parties for the transportation of the products we manufacture. In particular, a significant portion of the goods we manufacture are transported to different countries, which requires sophisticated warehousing, logistics and other resources. If any of the third parties that we use to transport products are unable to deliver the goods we manufacture in a timely manner, we may be unable to sell these products at full value or at all, which could cause us to miss deliveries and breach our contracts, which could damage our relationships with our customers and subject us to claims for damages under our contracts. Any of these events could have a material adverse effect on our business, financial condition, results of operations or cash flows. We may be subject to information technology systems failures, cybersecurity attacks, network disruptions and breaches of data security, which could compromise our information and expose us to liability. Our information technology systems are an important element for effectively operating our business. Information technology systems or processes, and the information technology systems or processes of our customers, our third- party service providers, our vendors or other parties that have been entrusted with our information, including risks associated with any failure to maintain or upgrade our systems, network disruptions and breaches of data security could disrupt our operations by impeding our processing of transactions, our ability to protect customer or company information or our financial reporting, leading to increased costs. It is possible that future technological developments could adversely affect the functionality of our computer systems and require further action and substantial funds to prevent or repair computer malfunctions. Our computer systems, including our back - up systems, could be damaged or interrupted by power outages, computer and telecommunications failures, computer viruses, cybercrimes, internal or external security breaches, events such as fires, earthquakes, floods, tornadoes and hurricanes, or errors by our employees. Although we have taken steps to address these concerns by implementing network security, back - up systems and internal control measures, these steps may be insufficient or ineffective. Security and / or privacy breaches, acts of vandalism or terror, computer viruses, misplaced or lost data, programming, and / or human error or other similar events with respect to our information technology systems or processes or the information technology systems or processes of third- parties that have been entrusted with our information expose us to a risk of loss or misuse of this information, litigation and potential liability, which could have a material adverse effect on our business, financial condition, results of operations or cash flows. If we are unable to successfully negotiate with the representatives of our employees, including labor unions, we may experience strikes and work stoppages. We are party to collective bargaining agreements and similar agreements with our employees. As of December 31, ~~2022~~ **2023** , approximately ~~524~~ **440** employees, or ~~39~~ **35** % of our worldwide employees, were covered by collective bargaining or similar agreements, all of which were covered by agreements that expire, or are subject to renegotiation, at various times through December 31, ~~2023~~ **2024** . Although we believe that, in general, our relationships with our employees are good, we cannot predict the outcome of current and future negotiations and consultations with employee representatives, which could have a material adverse effect on our business. We may not succeed in renewing or extending these agreements on terms satisfactory to us. Although we have not had any material work stoppages or strikes **initiated by our employees** during the past decade ~~initiated by our employees~~ , they may occur in the future during renewal or extension negotiations or otherwise. A material work stoppage, strike or other union dispute could adversely affect our business, financial condition, results of operations and cash flows. ~~We have significant goodwill on our balance sheet that is sensitive to changes in the market, which could result in impairment charges. We had approximately $ 171. 1 million of goodwill on our balance sheet as of December 31, 2022. Goodwill is tested for impairment annually in the fourth quarter or more often if events or changes in circumstances indicate a potential impairment may exist. Factors that could indicate that our goodwill is impaired or that could increase the risk of future impairment include a decline in our stock price and market capitalization, lower than projected operating results and cash flows, and slower growth rates in our industry. Impairment testing incorporates our estimates of future operating results and cash flows, estimates of future growth rates, and our judgment regarding the applicable discount rates used on estimated operating results and cash flows. If we determine at a future time that impairment exists, it may result in a significant non- cash charge to earnings and lower stockholders' equity.~~ Our ability to grow and compete effectively depends on protecting our intellectual property. Failure to protect our intellectual property could adversely affect our business. We believe that our intellectual property, consisting primarily of patents and proprietary know - how and information, is important to our growth. Our intellectual property portfolio is extensive, with ~~over 135~~ **approximately 100** U. S. and foreign patents and ~~published~~ **pending** patent applications, which we believe is more than any of our major competitors in the businesses in which we operate. Failure to protect our intellectual property may result in the loss of the exclusive right to use our technologies. We rely on patent, trademark, copyright and trade secret laws and confidentiality and restricted- use agreements to protect our intellectual property. However, some of our intellectual property is not covered by any patent or patent application or any such agreement. Intellectual property protection does not protect against technological obsolescence due to developments by others or changes in customer needs. Patents are subject to complex factual and legal considerations. Accordingly, the validity, scope and enforceability of any particular patent can be uncertain. Therefore, we cannot assure you that: • any of the U. S. or non - U. S. patents now or hereafter owned by us, or that third parties have licensed to us or may in the future license to us, will not be circumvented, challenged or invalidated; • any of the U. S. or non - U. S. patents that third parties have non - exclusively licensed to us, or may non - exclusively license to us in the future, will not be licensed to others; or • any of the patents for which we have applied or may in the future apply will be issued at all or with the breadth of claim coverage we seek. Moreover, patents, even if valid, only provide protection for a specified limited duration. In addition, effective patent, trademark and trade secret protection may be limited or unavailable or we may not apply for it in the United States or in any of the other countries in which we operate. The protection of our intellectual property rights may be achieved, in part, by prosecuting claims against others who we believe have misappropriated our technology or have infringed upon our intellectual property rights, as well as by defending against misappropriation or infringement claims brought by others against us. Our involvement in litigation to protect or defend our rights in these areas could result in a significant expense to us, adversely affect the development of sales of the related products, and divert the efforts of our technical and management personnel, regardless of the outcome of such litigation. We cannot assure you that agreements designed to protect our proprietary know - how and information will not be breached, that we will have adequate remedies for any such breach, or that our strategic alliance suppliers and customers, consultants, employees or others will not assert rights against us with respect to intellectual property arising out of our relationships with them. Third parties may claim that our products or processes infringe their intellectual property rights, which may cause us to pay unexpected litigation costs or damages or prevent us from selling our products or services. From time to time, we may become subject to legal proceedings, including allegations and claims of alleged infringement or misappropriation by us of the patents and other intellectual property rights of third parties. We cannot assure you that the use of our patented technology or proprietary know - how or information does not infringe the intellectual property rights of others. In addition, attempts to enforce our own intellectual property claims may subject us to counterclaims that our intellectual property rights are invalid, unenforceable or are licensed to the party against whom we are asserting the claim or that we are infringing that party' s alleged intellectual property rights. We may also be obligated to indemnify affiliates or other partners who are accused of violating third parties' intellectual property rights by virtue of those affiliates or partners' agreements with us, and this could increase our costs in defending such claims and our damages. Legal proceedings involving intellectual property rights, regardless of merit, are highly uncertain and can involve complex legal and scientific analyses, can be time consuming, expensive to litigate or settle and can significantly divert resources, even if resolved in our favor. Our failure to prevail in such matters could result in loss of intellectual property rights or judgments awarding substantial damages and injunctive or other equitable relief against us. If we were to be held liable or discover or be notified that our products or processes potentially infringe or otherwise violate the intellectual property rights of others, we may face a loss of reputation and may not be able to exploit some or all of our intellectual property rights or technology. If necessary, we may seek licenses to intellectual property of others. However, we may not be able to obtain the necessary licenses on terms acceptable to us or at all. Our failure to obtain a license from a third- party for that intellectual property necessary for the production or sale of any of our products could cause us to incur substantial liabilities and / or suspend the production or shipment of products or the use of processes requiring the use of that intellectual property. We may be required to substantially re - engineer our products or processes to avoid infringement. Any of the foregoing may require considerable effort and expense, result in substantial increases in operating costs, delay or inhibit sales or preclude us from effectively competing in the marketplace, which in turn could have a material adverse effect on our business and financial results. Our business, financial condition and results of operations **could** ~~continue to~~ be adversely impacted by increased costs. ~~We continue to experience higher~~ **Our business may be negatively impacted by increased** costs ~~driven by recent global inflationary pressures, particularly~~ for ~~third- party~~ **manufacturing inputs, including** needle coke, energy, and freight. We ~~continue to take steps to mitigate these costs increases, however, we~~ may not be able to ~~fully~~ offset **or pass on** these costs ~~increases~~ , which could lead to further adverse impacts on our business, financial condition and results of operations. ~~The COVID~~ **We currently benefit from U. S. and EU anti** - **dumping duties** ~~19 pandemic has had,~~ and **tariffs against certain Chinese and Indian imports that if reduced or not extended** could have ~~, an~~ **a material** adverse ~~impact~~ **effect** on our **results of operations, cash flow, liquidity and financial condition. These anti- dumping duties and tariffs are generally subject to periodic reviews and challenges, which can result in their revocation or reduction. There can be no assurance that these anti- dumping duties and tariffs will be continued in the future or that such anti- dumping duties and tariffs will adequately combat unfairly traded imports. If these anti- dumping duties and tariffs were to be revoked or reduced in the future, our** business, **financial condition and** results **would be** ~~of operations, financial position and cash flows. The COVID- 19 pandemic and preventative measures taken to contain or mitigate the pandemic have caused, and may cause, business slowdowns and significant disruption in the financial markets and economy both globally and in the United States. As a result of the pandemic, we continue to limit employee travel and have implemented a hybrid work policy for certain employees. While these measures have been necessary and appropriate, they have resulted in additional costs and have~~ adversely impacted ~~our business and financial performance. The pandemic has adversely affected, and is expected to continue to adversely affect, our business, results of operations, financial position and cash flows. Such effects may be material and the potential impacts include, but are not limited to: • adverse impacts on our customers, and resultant impacts on demand for our products; • disruptions at our facilities, including reductions in operating hours, labor shortages and changes in operating procedures; • disruptions in our supply chain due to transportation delays, travel restrictions, raw material cost increases and shortages, and closures of businesses or facilities; and • volatility in the global financial markets, which could have a negative impact on our ability to access capital and additional sources of financing in the future. In addition, we cannot predict the impact that the COVID- 19 pandemic will have on our customers, employees, suppliers and distributors, and any adverse impacts on these parties may have a material adverse impact on our business. The impact of the COVID- 19 pandemic may also exacerbate other risks discussed in this Annual Report, any of which could have a material effect on us~~ . Risks related to our indebtedness Our indebtedness could limit our financial and operating activities and adversely affect our ability to incur additional debt to fund future needs and our ability to fulfill our obligations under our existing and future indebtedness. Our credit agreement (as amended, the " 2018 Credit Agreement ") **currently** provides for ~~(i) an aggregate $ 2, 250 million senior secured term loan facility (the " 2018 Term Loan Facility ") after giving effect to the June 2018 amendment (the" First Amendment") that increased the aggregate principal amount of the 2018 Term Loan Facility from $ 1, 500 million to $ 2, 250 million and (ii)~~ a $ 330 million senior secured revolving credit facility after giving effect to the May 2022 amendment **(the " Third Amendment ")** that increased the revolving commitments under the 2018 Credit Agreement by $ 80 million from $ 250 million (the " 2018 Revolving Credit Facility " ~~and, together~~ **). As any borrowings under the 2018 Revolving Credit Facility remain subject to compliance** with the **financial covenant in our** 2018 ~~Term Loan~~ **Revolving Credit** Facility, ~~as amended,~~ **our operating performance resulted in a reduction of** the ~~" Senior Secured~~ **availability under our 2018 Revolving** Credit ~~Facilities~~ **Facility** ~~")~~ . As of December 31, ~~2022~~ **2023** , we had approximately $ ~~921~~ **925** . ~~8~~ **5** million of secured indebtedness outstanding including borrowings under ~~the Senior Secured Credit Facilities and~~ our 4. 625 %

Senior Secured Notes due 2028 (the " 2020 Senior Secured Notes ") **and our 9. 875 % Senior Secured Notes due 2028 (the " 2023 Senior Secured Notes ")** . As of December 31, ~~2022~~ **2023** , we had $ ~~327~~ **112** . ~~0~~ **4** million available for borrowing under the 2018 Revolving Credit Facility (taking into account approximately $ 3. ~~0~~ **1** million of outstanding letters of credit issued thereunder). Interest expense for the years ended December 31, ~~2022~~ **2023** and December 31, ~~2021~~ **2022** was $ **58. 1 million and $** 36. 6 ~~million and $ 68. 8~~ million, respectively. Our indebtedness could: • require us to dedicate a substantial portion of our cash flow to the payment of principal and interest, thereby reducing the funds available for operations and future business opportunities; • make it more difficult for us to satisfy our obligations; • limit our ability to borrow additional money if needed for other purposes, including working capital, capital expenditures, debt service requirements, acquisitions and general corporate or other purposes, on satisfactory terms or at all; • limit our ability to adjust to changing economic, business and competitive conditions; • place us at a competitive disadvantage with competitors who may have less indebtedness or greater access to financing; • require us to reduce or delay capital expenditures or sell assets or operations to meet our scheduled debt service obligations; • make us more vulnerable to ~~an increase in interest rates,~~ a downturn in our operating performance or a decline in general economic conditions; and • make us more susceptible to changes in credit ratings, which could impact our ability to obtain financing in the future and increase the cost of such financing. Compliance with our debt obligations under the ~~Senior Secured~~ **2018 Revolving** Credit ~~Facilities~~ **Facility** ~~and~~ **,** 2020 Senior Secured Notes **, and 2023 Senior Secured Notes, and any future indebtedness** could materially limit our financial or operating activities, or hinder our ability to adapt to changing industry conditions, which could result in our losing market share, a decline in our revenue or a negative impact on our operating results. The 2018 **Revolving** Credit ~~Agreement~~ **Facility** and the ~~indenture~~ **indentures** governing the 2020 **Senior Secured Notes and 2023** Senior Secured Notes include covenants that could restrict or limit our financial and business operations. The 2018 **Revolving** Credit ~~Agreement~~ **Facility** and the ~~indenture~~ **indentures** governing the 2020 **Senior Secured Notes and the 2023** Senior Secured Notes contain a number of restrictive covenants that, subject to certain exceptions and qualifications, restrict or limit our ability and the ability of our subsidiaries to, among other things: • incur, repay or refinance indebtedness; • create liens on or sell our assets; • engage in certain fundamental corporate changes or changes to our business activities; • make investments or engage in mergers or acquisitions; • pay dividends or repurchase stock; • engage in certain affiliate transactions; • enter into agreements or otherwise restrict our subsidiaries from making distributions or paying dividends to the borrowers under the ~~Senior Secured~~ **2018 Revolving** Credit ~~Facilities~~ **Facility** or to us or certain of our subsidiaries, as applicable; and • repay intercompany indebtedness or make intercompany distributions or pay intercompany dividends. The 2018 **Revolving** Credit ~~Agreement~~ **Facility** also contains certain affirmative covenants and contains a financial covenant that requires us to maintain a senior secured first lien net leverage ratio not greater than 4. 00: 1. 00 when the aggregate principal amount of borrowings under the 2018 Revolving Credit Facility and outstanding letters of credit issued under the 2018 Revolving Credit Facility (except for undrawn letters of credit in an aggregate amount equal to or less than $ 35 million), taken together, exceed 35 % of the total amount of commitments under the 2018 Revolving Credit Facility. These covenants and restrictions could affect our ability to operate our business and may limit our ability to react to market conditions or take advantage of potential business opportunities as they arise. Additionally, our ability to comply with these covenants may be affected by events beyond our control, including general economic and credit conditions and industry downturns. If we fail to comply with the covenants in the 2018 **Revolving** Credit ~~Agreement~~ **Facility** and the ~~indenture~~ **indentures** governing the 2020 Senior Secured Notes **and the 2023 Senior Secured Notes** , and are unable to obtain a waiver or amendment, an event of default would result, and the lenders and noteholders could, among other things, declare outstanding amounts due and payable or, with respect to the 2018 **Revolving** Credit ~~Agreement~~ **Facility** , refuse to lend additional amounts to us or require deposit of cash collateral in respect of outstanding letters of credit. If we were unable to repay or pay the amounts due, the lenders under the 2018 **Revolving** Credit ~~Agreement~~ **Facility** and the noteholders could, among other things, proceed against the collateral granted to them to secure the indebtedness, which includes substantially all of our and our U. S. subsidiaries' assets and **, with respect to the 2018 Revolving Credit Facility,** certain assets of certain of our non ~~-~~ **-** U. S. subsidiaries. Risks related to tax matters We are required to make payments under a Tax Receivable Agreement for certain tax benefits we may claim in the future, and the amounts we may pay could be significant. In connection with the completion of our initial public offering (~~"~~ **"** IPO ~~"~~ **"**), we entered into a tax receivable agreement (**as amended and restated,** the " Tax Receivable Agreement ") that provides Brookfield **Corporation and its affiliates (together, " Brookfield ")** the right to receive future payments from us of 85 % of the amount of cash savings, if any, in U. S. federal income tax and Swiss tax that we and our subsidiaries realize as a result of the utilization of certain tax assets attributable to periods prior to our IPO, including certain federal net operating losses (" NOLs "), previously taxed income under Section 959 of the Code, foreign tax credits, and certain NOLs in GrafTech Switzerland S. A. (collectively, the " Pre - IPO Tax Assets "). In addition, we pay interest on the payments we make to Brookfield with respect to the amount of this cash savings from the due date (without extensions) of our tax return where we realize this savings to the payment date at a rate equal to ~~London Interbank Offered~~ **the forward looking term** ~~Rate~~ **rate based on the secured overnight financing rate administered by the Federal Reserve Bank of New York** (~~" LIBOR "~~ **or a successor administrator of the secured overnight financing rate**) **for a one- month period** plus 1. ~~00~~ **10** % ~~per annum~~ . The term of the Tax Receivable Agreement commenced on April 23, 2018 and will continue until there is no potential for any future tax benefit payments. We have made payments of approximately $ ~~53~~ **58** . ~~6~~ **1** million related to the Tax Receivable Agreement. We expect that, based on current tax laws, future payments under the Tax Receivable Agreement relating to the Pre- IPO Tax Assets will be approximately $ ~~15~~ **11** . ~~6~~ **2** million in the aggregate. The maximum amount over the term of the agreement is approximately $ 70. 0 million. Risks related to ~~government~~ **our legal and** ~~regulation~~ - **regulatory environment** Stringent health, safety and environmental **laws and** regulations applicable to our manufacturing operations and facilities could result in substantial costs related to compliance, sanctions or material liabilities and may affect the availability of raw materials. We are subject to stringent environmental, health and safety laws and regulations relating to our current and former properties (including former onsite landfills over which we have retained ownership), other properties that neighbor ours or to which we sent wastes for treatment or disposal, as well as our current raw materials, products, and operations. Some of our products (including our raw materials) are subject to extensive environmental and industrial hygiene regulations governing the registration and safety analysis of their component substances. Coal tar pitch, which is classified as a substance of very high concern under the EU ’ s Registration, Evaluation, Authorization and Restriction of Chemical Regulation (“ REACH ”) regulations, is used in certain of our processes but in a manner that we believe does not currently require us to obtain a specific authorization under the REACH guidelines. Violations of these laws and regulations, or of the terms and conditions of permits required for our operations, can result in damage claims, reputational harm, the imposition of substantial fines and sanctions and require the installation of costly pollution control or safety equipment or costly changes in operations to limit pollution or decrease the likelihood of injuries. In addition, we are currently conducting remediation and / or monitoring at certain current and former properties, including at our Monterrey, Mexico facility, and may become subject to material liabilities in the future for the investigation and cleanup of contaminated properties, including with respect to emerging contaminants or for properties on which we have ceased operations. We have been in the past, and could be in the future, subject to claims alleging personal injury, death or property damage resulting from exposure to hazardous substances, accidents or otherwise for conditions creating an unsafe workplace. Further, **noncompliance or** alleged noncompliance with or stricter enforcement of, or changes in interpretations of, existing laws and regulations, adoption of more stringent new laws and regulations, discovery of previously unknown contamination or imposition of new or increased requirements could require us to incur costs or become the basis of new or increased liabilities or reputational harm that have a material adverse impact on our operations, costs or results of operations. It is also possible that the impact of safety and environmental regulations on our suppliers could affect the availability and cost of our raw materials. For example, legislators, regulators and others, as well as many companies, are considering ways to reduce emissions of greenhouse gases (“ GHGs ”) due to scientific, political and public concern that GHG emissions are altering the atmosphere in ways that are affecting, and are expected to continue to affect, the global climate. The EU has established GHG regulations and is revising its emission trading system for the period after 2020 in a manner that may require us to incur additional costs. The United States has required annual reporting of GHG emissions from certain large sources beginning in 2011 and various and regional state efforts to reduce GHG emissions have also been implemented. Further measures, in the United States, EU and many other countries, may be enacted in the future. In particular, in December 2015, more than 190 countries participating in the United Nations Framework Convention on Climate Change reached an international agreement related to curbing GHG emissions (the “ Paris Agreement ”). Further GHG regulations under the Paris Agreement or otherwise may take the form of a national or international cap - and - trade emissions permit system, a carbon tax, emissions controls, reporting requirements, or other regulatory initiatives. For more information, see the section entitled “ Business. ” The further regulation of GHG emissions or other environmental regulations in countries in which we operate or market our products could impose additional costs, both direct and indirect, on our business, and on the businesses of our customers and suppliers, such as increased energy and insurance rates, higher taxes, new environmental compliance program expenses, including capital improvements, environmental monitoring and the purchase of emission credits, and other administrative costs necessary to comply with current and potential future requirements or limitations that may be imposed, as well as other unforeseen or unknown costs. To the extent that similar requirements and limitations are not imposed globally, this regulation may impact our ability to compete with companies located in countries that do not have these requirements or limitations. We may also experience a change in competitive position relative to industry peers, changes in prices received for products sold and changes to profit or loss arising from increased or decreased demand for our products. The impact of any future GHG regulatory requirements on our global business will be dependent upon the design of the regulatory schemes that are ultimately adopted and, as a result, we are unable to predict their significance to our operations at this time. Global data and privacy protection laws applicable to us require substantial costs related to compliance, and any failure to comply could result in significant liability to us, including fines and penalties. We collect data, including personally identifiable information of our employees, in the course of our business activities and transfer such data between our affiliated entities, to and from our business partners and to third - party service providers, which may be subject to global data privacy laws and cross - border transfer restrictions. While we take steps to comply with these legal requirements, any changes to such laws may impact our ability to effectively transfer data across borders in support of our business operations and any breach of such laws may lead to administrative, civil or criminal liability, as well as reputational harm to the Company and its employees. For example, the GDPR ~~,~~ introduced a number of obligations for subject companies, including obligations relating to data transfers and the security of personal data they process. We take steps to protect the security and integrity of the information we collect, but there is no guarantee that the steps we have taken will prevent inadvertent or unauthorized use or disclosure of such information, or prevent third parties from gaining unauthorized access to this information despite our efforts. Any such incident could result in legal claims or proceedings, liability under laws that protect the privacy of personally identifiable information (including the GDPR) and damage to our reputation. The cost of ongoing compliance with global data protection and privacy laws and the potential fines and penalties levied in the event of a breach of such laws may have an adverse effect on our business and operations. For example, the GDPR currently provides that supervisory authorities in the EU may impose administrative fines for non - compliance of up to € 20. 0 million or 4 % of the subject company’ s annual, group - wide turnover (whichever is higher) and individuals who have suffered damage as a result of a subject company’ s non - compliance with the GDPR also have the right to seek compensation from such company. We will need to continue dedicating financial resources and management time to compliance efforts with respect to global data protection and privacy laws, including the GDPR. **We are involved in certain arbitrations as respondents / counterclaimants with a few customers who, among other things, have failed to perform under their LTAs and in certain instances are seeking to modify or frustrate their contractual commitments to us, and the outcome of these arbitrations could have a material adverse effect on our results of operations, cash flow, liquidity and financial condition. In particular, Aperam South America LTDA, Aperam Sourcing**

S. C. A., ArcelorMittal Sourcing S. C. A., and ArcelorMittal Brasil S. A. initiated a single arbitration proceeding against two of the Company' s subsidiaries in the International Chamber of Commerce in June 2020. The claimants argue, among other things, that they should no longer be required to comply with the terms of the LTAs that they signed due to an alleged drop in market prices for graphite electrodes in January 2020. Alternatively, the claimants argue that they should not be required to comply with the LTAs that they signed due to alleged market circumstances at the time of execution. The claimants are alleging damages in the amount of approximately $ 188. 2 million, including interest, for the period covering the first quarter of 2020 through the first quarter of 2023. Although we believe we have valid defenses to these claims, arbitrations, like litigation, are inherently subject to many uncertainties, and we ultimately may not prevail, which would have adverse impacts on our business, financial condition and results of operations. Risks related to our common stock ~~If the ownership of our common stock continues to be highly concentrated, it may prevent minority stockholders from influencing significant corporate decisions and may result in conflicts of interest. As of January 31, 2023, Brookfield owned approximately 25 % of our outstanding common stock. Accordingly, Brookfield has significant influence over all matters requiring a stockholder vote, including the election of directors; mergers, consolidations and acquisitions; the sale of all or substantially all of our assets and other decisions affecting our capital structure; the amendment of our Amended and Restated Certificate of Incorporation (" Amended Certificate of Incorporation ") and our Amended and Restated By- Laws (" Amended By- Laws "); and our winding up and dissolution. This concentration of ownership may delay, deter or prevent acts that would be favored by our other stockholders. The interests of Brookfield may not always coincide with our interests or the interests of our other stockholders. This concentration of ownership may also have the effect of delaying, preventing or deterring a change in control. Also, Brookfield may seek to cause us to take courses of action that, in its judgment, could enhance its investment in us, but that might involve risks to our other stockholders or adversely affect us or our other stockholders. As a result, the market price of our common stock could decline or stockholders might not receive a premium over the then- current market price of our common stock upon a change in control. In addition, this concentration of share ownership may adversely affect the trading price of our common stock because investors may perceive disadvantages in owning shares in a company with significant stockholders. Our largest stockholder, Brookfield, whose representatives serve on our Board of Directors, has the right to engage or invest in the same or similar businesses as us. Brookfield has other investments and business activities in addition to their ownership of us. Brookfield has the right, and has no duty to abstain from exercising such right, to engage or invest in the same or similar businesses as us, do business with any of our clients, customers or vendors or employ or otherwise engage any of our officers, directors or employees. If Brookfield or any of its officers, directors or employees acquire knowledge of a potential transaction that could be a corporate opportunity, they have no duty, to the fullest extent permitted by law, to offer such corporate opportunity to us, our stockholders or our affiliates. In the event that any of our directors and officers who is also a director, officer or employee of Brookfield acquires knowledge of a corporate opportunity or is offered a corporate opportunity, provided that this knowledge was not acquired solely in such person' s capacity as our director or officer and such person acts in good faith, then to the fullest extent permitted by law such person is deemed to have fully satisfied such person' s fiduciary duties owed to us and is not liable to us, if Brookfield pursues or acquires the corporate opportunity or if Brookfield does not present the corporate opportunity to us.~~ Certain provisions, including in our Amended Certificate of Incorporation and our Amended By- Laws, could hinder, delay or prevent a change in control, which could adversely affect the price of our common stock. Our Amended Certificate of Incorporation and Amended By- Laws contain provisions that could make it more difficult for a third- party to acquire us without the consent of our Board of Directors ~~or Brookfield~~, including: • provisions in our Amended Certificate of Incorporation and Amended By- Laws that prevent stockholders from calling special meetings of our stockholders, except where the Delaware General Corporation Law (" DGCL ") confers the right to fix the date of such meetings upon stockholders; • advance notice requirements by stockholders with respect to director nominations and actions to be taken at annual meetings; • provisions in our Amended Certificate of Incorporation provide for a classified Board of Directors such that only one of three classes of directors is elected each year, which prevents our stockholders from replacing the majority our directors at once; • no provision in our Amended Certificate of Incorporation or Amended By- Laws provides for cumulative voting in the election of directors, which means that the holders of a majority of the outstanding shares of our common stock can elect all the directors standing for election; • under our Amended Certificate of Incorporation, our Board of Directors have authority to cause the issuance of preferred stock from time to time in one or more series and to establish the terms, preferences and rights of any such series of preferred stock, all without approval of our stockholders; and • nothing in our Amended Certificate of Incorporation precludes future issuances without stockholder approval of the authorized but unissued shares of our common stock. These provisions may make it difficult and expensive for a third- party to pursue a tender offer, change in control or takeover attempt that is opposed by ~~Brookfield, our management or~~ our Board of Directors. Stockholders who might desire to participate in these types of transactions may not have an opportunity to do so, even if the transaction is favorable to such stockholders. These anti- takeover provisions could substantially impede the ability of stockholders to benefit from a change in control or to change our management and Board of Directors and, as a result, may adversely affect the market price of our common stock and your ability to realize any potential change of control premium. Our Amended Certificate of Incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees. Our Amended Certificate of Incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for: • any derivative action or proceeding brought on our behalf; • any action asserting a breach of fiduciary duty; • any action asserting a claim against us arising under the DGCL, our Amended Certificate of Incorporation or our Amended By- Laws; and • any action asserting a claim against us that is governed by the internal- affairs doctrine. This exclusive forum provision may limit a stockholder' s ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers, and other employees. If a court were to find the exclusive forum provision in our Amended Certificate of Incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could harm our business. ~~The market price of our common stock could be negatively affected by sales of substantial amounts of our common stock in the public markets. The sale in the public markets of our common stock by Brookfield, which, as of January 31, 2023, owned approximately 25 % of our outstanding common stock, or by our officers and directors, or the perception that these sales may occur, could cause the market price of our common stock to decline or cause the market price of our common stock to trade at a discount. Brookfield may from time to time seek to sell or otherwise dispose of some or all of its shares, including by transferring shares to affiliates, distributing shares to its partners, members or beneficiaries, or selling shares in underwritten offerings, block sales, open market transactions or otherwise. Brookfield and our officers and directors may also sell shares into the public markets in accordance with the requirements of Rule 144, and Brookfield is entitled to request that we facilitate SEC registration of their sales of shares pursuant to the terms of a registration rights agreement. A decline in the price of our common stock might impede our ability to raise capital through the issuance of additional common stock or other equity securities.~~ We cannot guarantee that our stock repurchase program will be fully consummated or that it will enhance long- term stockholder value. Stock repurchases could also increase the volatility of the trading price of our stock and will diminish our cash reserves. Although our Board of Directors has authorized a stock repurchase program that does not have an expiration date, the program does not obligate us to acquire any particular amount of shares of common stock, and the stock repurchase program may be suspended or discontinued at any time at our discretion. We cannot guarantee that the program will be fully consummated or that it will enhance long- term stockholder value. The program could affect the trading price of our stock, and increase volatility, and any announcement of a termination of this program may result in a decrease in the trading price of our common stock. In addition, our use of this program will diminish our cash. ~~We may not pay cash dividends on our common stock. We currently pay cash dividends on our common stock in accordance with our dividend policy. We cannot assure you, however, that we will pay dividends in the future in these amounts or at all. Our Board of Directors may change the timing and amount of any future dividend payments or eliminate the payment of future dividends in its sole discretion, without any prior notice to our stockholders.~~