

GRAFTECH INTERNATIONAL LTD

Form S-1

March 04, 2019

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As filed with the Securities and Exchange Commission on March 4, 2019.

Registration No. 333-

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM S-1

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

GRAFTECH INTERNATIONAL LTD.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

3620
(Primary Standard Industrial
Classification Code Number)
982 Keynote Circle
Brooklyn Heights, OH 44131

27-2496053
(I.R.S. Employer
Identification No.)

(216) 676-2000
(Address, including zip code, and telephone number, including
area code, of registrant's principal executive offices)

Gina K. Gunning
Chief Legal Officer
GrafTech International Ltd.
982 Keynote Circle
Brooklyn Heights, OH 44131
(216) 676-2000

(Name, address, including zip code, and telephone number, including
area code, of agent for service)

(Copies of all communications, including communications sent to agent for service)

Sandra L. Flow, Esq.

William V. Fogg, Esq.

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Adam Fleisher, Esq.
Cleary Gottlieb Steen & Hamilton LLP
One Liberty Plaza
New York, New York 10006
(212) 225-2000

D. Scott Bennett, Esq.
Cravath, Swaine & Moore LLP
825 Eighth Avenue
New York, New York 10019
(212) 474-1000

Approximate date of commencement of proposed sale to the public:
As soon as practicable after this registration statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of each class of securities being registered	Amount to be registered(1)	Proposed maximum offering per unit(2)	Proposed maximum aggregate offering price(2)	Amount of registration fee
Common stock, \$0.01 par value per share	20,125,000	\$14.36	\$288,995,000.00	\$35,026.19

(1) Includes 2,625,000 shares of common stock that the underwriters have the option to purchase from the selling stockholder.

(2) Estimated solely for the purpose of calculating the amount of registration fee in accordance with Rule 457(c) under the Securities Act of 1933, as amended, based upon the average of the high and low sales prices of the registrant's common stock as reported by the New York Stock Exchange on March 1, 2019.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated March 4, 2019

Preliminary Prospectus

17,500,000 shares

Common stock

The selling stockholder identified in this prospectus is selling 17,500,000 shares of our common stock. We will not receive any of the proceeds from the sale of shares of our common stock by the selling stockholder.

Our common stock is listed on the New York Stock Exchange (NYSE) under the symbol "EAF." On March 1, 2019, the last reported sale price of our common stock on the NYSE was \$14.23 per share.

Investing in our common stock involves risks. See "Risk factors" beginning on page 15.

	Per share	Total
Public offering price	\$	\$
Underwriting discount(1)	\$	\$
Proceeds to the selling stockholder	\$	\$

(1) See "Underwriting" beginning on page 134 of the prospectus for additional information regarding total underwriting compensation.

The selling stockholder has granted the underwriters the right to purchase up to 2,625,000 additional shares of common stock at the public offering price less underwriting discounts and commissions, for 30 days after the date of this prospectus.

The underwriters expect to deliver the shares of common stock to investors on or about _____, 2019.

Neither the Securities and Exchange Commission (or SEC) nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

**J.P. Morgan
Citigroup**

HSBC

Credit Suisse

**RBC Capital
Markets**

**BMO Capital
Markets**

The date of this prospectus is _____, 2019.

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We are responsible for the information contained in this prospectus and in any related free-writing prospectus we may prepare or authorize to be delivered to you. We have not authorized anyone to give you any other information, and we take no responsibility for any other information that others may give you. We and the selling stockholder are not, and the underwriters are not, making an offer of these securities in any jurisdiction where the offer is not permitted. You should not assume that the information contained in this prospectus is accurate as of any date other than the date on the front of this prospectus.

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Market and industry data and forecasts

Certain market and industry data included in this prospectus has been obtained from third party sources that we believe to be reliable. Market estimates are calculated by using independent industry publications, government publications and third party forecasts in conjunction with our assumptions about our markets. We have not independently verified such third party information. While we are not aware of any misstatements regarding any market, industry or similar data presented herein, such data involves risks and uncertainties and is subject to change based on various factors, including those discussed under the headings "Special note regarding forward-looking statements" and "Risk factors" in this prospectus.

Trademarks

We own or otherwise have rights to the trademarks, service marks, copyrights and trade names, including those mentioned in this prospectus, used in conjunction with the marketing and sale of our products and services. This prospectus includes trademarks, which are protected under applicable intellectual property laws and are our property and/or the property of our subsidiaries. This prospectus may also contain trademarks, service marks, copyrights and trade names of other companies, which are the property of their respective owners. We do not intend our use or display of other companies' trademarks, service marks, copyrights or trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies. Solely for convenience, our trademarks, service marks and trade names referred to in this prospectus may appear without the ®, ™, or SM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights to these trademarks, service marks and trade names.

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Prospectus summary

This summary highlights information contained elsewhere in this prospectus. It may not contain all the information that may be important to you. You should read the entire prospectus carefully, including the section entitled "Risk factors" and our financial statements and the related notes included elsewhere in this prospectus, before making an investment decision to purchase shares of our common stock.

Unless the context suggests otherwise, references in this prospectus to "GrafTech," the "Company," "we," "us," and "our" refer to GrafTech International Ltd., a Delaware corporation, and its consolidated subsidiaries. See "Our company" below for more information. References in this prospectus to the "selling stockholder" refer to BCP IV GrafTech Holdings LP, an affiliate of Brookfield Asset Management Inc. and Brookfield Business Partners L.P., and the direct majority owner of GrafTech. References in this prospectus to "Brookfield" refer to Brookfield Asset Management Inc. and its affiliates. All dollar amounts in this prospectus are in U.S. dollars and are expressed in thousands unless specified otherwise. The financial statements have been prepared in accordance with generally accepted accounting principles in the United States (or GAAP).

Our company

We are a leading manufacturer of high quality graphite electrode products essential to the production of electric arc furnace (or EAF) steel and other ferrous and non-ferrous metals. We believe that we have the most competitive portfolio of low-cost graphite electrode manufacturing facilities in the industry, including three of the five highest capacity facilities in the world (excluding China). We are the only large scale graphite electrode producer that is substantially vertically integrated into petroleum needle coke, the primary raw material for graphite electrode manufacturing, which is currently in limited supply. This unique position provides us with competitive advantages in product quality and cost. Founded in 1886, we have over 130 years of experience in the research and development (or R&D) of graphite- and carbon-based solutions, and our intellectual property portfolio is extensive. We currently have graphite electrode manufacturing facilities in Calais, France, Pamplona, Spain, Monterrey, Mexico and St. Marys, Pennsylvania. Our customers include major steel producers and other ferrous and non-ferrous metal producers in Europe, the Middle East and Africa (or EMEA), the Americas and Asia-Pacific (or APAC), which sell their products into the automotive, construction, appliance, machinery, equipment and transportation industries. Our vision is to provide highly engineered graphite electrode services, solutions and products to EAF operators. Based on the high quality of our graphite electrodes, reliability of our petroleum needle coke supply and our excellent customer service, we believe that we are viewed as a preferred supplier to the global EAF steel producer market.

Graphite electrodes are an industrial consumable product used primarily in EAF steel production, one of the two primary methods of steel production and the steelmaking technology used by all "mini-mills." Electrodes act as conductors of electricity in the furnace, generating sufficient heat to melt scrap metal, iron ore or other raw materials used to produce steel or other metals. We estimate that, on average, the cost of graphite electrodes represents only approximately 1% to 5% of the total production cost of steel in a typical EAF, but they are essential to EAF steel production. Graphite electrodes are currently the only known commercially available products that have the high levels of electrical conductivity and the capability to sustain the high levels of heat generated in EAF steel production. As a result, EAF steel manufacturers have been willing to pay a premium for a reliable supply of high quality graphite electrodes, and, in some cases, to pass on this premium to their customers in the form of surcharges. Graphite electrodes are also used in steel refining in ladle furnaces and in other processes, such as the production of titanium dioxide, stainless steel, aluminum, silicon metals and other ferrous and non-ferrous metals.

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Petroleum needle coke, a crystalline form of carbon derived from decant oil, is the primary raw material used in the production of graphite electrodes. We achieved substantial vertical integration with this critical raw material source through our acquisition of Seadrift Coke LP (or Seadrift) in November 2010, significantly reducing our reliance on other suppliers. The petroleum needle coke industry is highly concentrated. We believe Seadrift is the second largest petroleum needle coke producer in the world. We also believe that the quality of Seadrift's petroleum needle coke is superior for graphite electrode production compared to most of the petroleum needle coke available to our peers on the open market, allowing us to produce higher quality electrodes in a cost-efficient manner. Additionally, we believe that this vertical integration provides a significant cost advantage relative to our competitors in periods of tight petroleum needle coke supply, such as the current market environment. We believe this cost advantage will grow as demand for petroleum needle coke increases for use in lithium-ion batteries in electric vehicles. The demand for petroleum needle coke in lithium-ion batteries is growing rapidly, with usage going from approximately 1,000 MT in 2014 to 60,000 MT in 2017. This rapidly growing alternative source of demand is a significant development for the petroleum needle coke industry and is contributing to the global shortage in petroleum needle coke. Going forward, we expect to purchase approximately one third of our needle coke requirements from external sources, given the increase in our graphite electrode capacity from our debottlenecking initiative. As a result, we continue to experience higher third party petroleum needle coke costs, including in the first quarter of 2019, which will affect our cost of sales in 2019.

According to the World Steel Association (or WSA), EAFs accounted for 46%, or 394 million metric tons (or MT), of global crude steel production (excluding China) in 2017, which represented an increase of 8% over 2016. Between 1984 and 2011, EAF steelmaking was the fastest-growing segment of the steel sector, with production increasing at an average rate of 3.5% per year, based on WSA data. Historically, EAF steel production has grown faster than the overall steel market due to the greater resilience, more variable cost structure, lower capital intensity and more environmentally friendly nature of EAF steelmaking. This trend was partially reversed between 2011 and 2015 due to global steel production overcapacity driven largely by Chinese blast furnace (or BOF) steel production. Beginning in 2016, efforts by the Chinese government to restructure China's domestic steel industry have led to limits on Chinese BOF steel production and lower export levels. In addition, developed economies, which typically have much larger EAF steel industries, have instituted a number of trade policies in support of domestic steel producers. As a result, since 2016, the EAF steel market has rebounded strongly and resumed its long-term growth trajectory. This revival in EAF steel production has resulted in increased demand for our graphite electrodes.

At the same time, two supply-side structural changes have contributed to record high prices of graphite electrodes in 2018. First, ongoing consolidation and rationalization of graphite electrode production capacity have limited the ability of graphite electrode producers to meet demand. We estimate that approximately 20% of graphite electrode industry production capacity (excluding China) was closed or repurposed from 2014-2016, and we believe the majority of these closures represent permanent reductions. Second, demand for petroleum needle coke has outpaced supply due to increasing demand for petroleum needle coke for lithium-ion batteries used in electric vehicles. As a result, graphite electrode prices have reached record high prices in 2018. Historically, between 2008 and 2017, our weighted average realized price of graphite electrodes was approximately \$4,500 per MT (on an inflation-adjusted basis using constant 2018 dollars) and fell to a historic low of approximately \$2,500 per MT in 2016. With the renewed demand for, and constrained supply of, graphite electrodes, industry spot prices have reached record highs in 2018. In the fourth quarter of 2018, our weighted average realized price of graphite electrodes was \$9,950 per MT, representing an increase of 2% from the prior quarter and 141% from the prior year. In light of improved market conditions, the long lead time required to produce our products, our position as one of the market's largest producers and our ability, through our substantial vertical integration with Seadrift, to provide customers with a reliable long-term supply of graphite electrodes despite the market shortage of petroleum needle coke, we have implemented a commercial strategy to sell graphite electrodes through three- to five-year take-or-pay contracts.

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GrafTech historical weighted average realized prices and signed three- to five-year weighted average contract prices for graphite electrodes

-
- (1) Weighted average realized price for a period reflects the total revenues from sales of graphite electrodes for the period divided by the graphite electrode sales volume for that period. The weighted average realized prices in this chart are shown in constant 2018 dollars for comparability. See "Management's discussion and analysis of financial condition and results of operations Key Operating Metrics."
- (2) Weighted average contract price for a period reflects the volume-weighted average price for graphite electrodes to be delivered under the three- to five-year take-or-pay contracts we have entered into in 2018 and 2019. All of these contracts have fixed prices and either fixed volumes (83% of the portfolio) or a specified volume range (17% of the portfolio). For those contracts with a specified volume range, weighted average contract prices are computed using the volume midpoint. The aggregate difference between the volume midpoint and the minimum or maximum volumes across our cumulative portfolio of take-or-pay contracts with specified volume ranges is approximately 5,000 MT per year in 2019-2022. See "Business Contracts and customers."

As a leading producer of graphite electrodes, we believe we are well-positioned to benefit from this industry transformation. In 2017, based on our three primary operating facilities, we had the capability, depending on product demand and mix, to manufacture approximately 167,000 MT of graphite electrodes per year. In 2018, we completed an operational improvement and debottlenecking initiative to increase production capacity at these facilities by approximately 20% to approximately 202,000 MT. Currently, our warm idled St. Marys facility is finishing some electrodes sourced from other facilities to provide flexibility to our overall manufacturing footprint. We could ramp up production at St. Marys if required to support our customers. If restarted, St. Marys would add approximately 28,000 MT of annual capacity. This overall total production capacity would be comparable to our largest competitor, which we estimate currently has a total of approximately 230,000 MT of production capacity (excluding China). We believe the total worldwide graphite electrode production capacity was approximately 800,000 MT (excluding China) in 2018, with a capacity utilization of approximately 90% (excluding China). We believe worldwide graphite electrode production capacity, excluding China, has now increased to approximately 850,000 MT. Electrode production globally (excluding China) is focused on the manufacture of ultra-high power (or UHP) electrodes for EAFs, while the majority of Chinese production is of ladle electrodes for BOFs. The

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production of UHP electrodes requires an extensive proprietary manufacturing process and material science knowledge, including the use of superior needle coke blends. As a result, graphite electrode producers inside and outside of China are generally not in direct competition with each other for major product lines.

On August 15, 2015, we became an indirect wholly owned subsidiary of Brookfield through a tender offer to shareholders and subsequent merger transaction. Brookfield is an experienced operator of industrial, natural resource and other tangible asset businesses. This transaction has provided us with a stable equity partner with experience in industrial sectors.

On April 23, 2018, we completed our initial public offering (or IPO) of 35,000,000 shares of our common stock held by the selling stockholder at a price of \$15.00 per share. On April 26, 2018, we closed the sale of an additional 3,097,525 shares of common stock held by the selling stockholder at a price to the public of \$15.00 per share, as a result of the partial exercise by the underwriters in our IPO of their overallotment option. We did not receive any proceeds related to the IPO. Our common stock is listed on the NYSE under the symbol "EAF."

On August 13, 2018, we repurchased 11,688,311 shares directly from the selling stockholder. These shares were retired upon repurchase. The price per share paid by us was equal to the price at which the underwriters purchased the shares from the selling stockholder's August 2018 public secondary offering of 23,000,000 shares of our common stock, net of underwriting commissions and discounts. We funded the share repurchase from cash on hand. After giving effect to the offerings by the selling stockholder and our repurchase of shares, the selling stockholder currently owns approximately 79% of our common stock.

Our executive offices are located at 982 Keynote Circle, Brooklyn Heights, Ohio 44131 and our telephone number is (216) 676-2000. Our Internet website address is www.graftech.com. Information on, or accessible through, our website is not part of this prospectus. We have included our website address only as an inactive textual reference and do not intend it to be an active link to our website.

Competitive strengths

We are one of the two largest producers of graphite electrodes outside of China, accounting for approximately 24% of global production capacity (excluding China), and we believe our strategically positioned global footprint provides us with competitive advantages

We believe our facilities are among the most strategically located and lowest cost large-scale graphite electrode manufacturing plants in the world. Of the graphite electrode manufacturing facilities currently operating outside of China, we estimate that our three operating manufacturing facilities represent approximately 24% of estimated production capacity for graphite electrodes, making us a critical supplier to global EAF steel manufacturers. Our manufacturing facilities are located in the Americas and EMEA, providing us with access to low-cost and reliable energy sources, logistical and freight advantages in sourcing raw materials and shipping our graphite electrodes to our customers compared to our competitors, and excellent visibility into the large North American and European EAF steelmaking markets. Our experience in producing graphite electrodes for a varied global customer base positions us to meet customer requirements across a range of product types and quality levels, including support and technical services, further distinguishing us from our competitors.

We are a pure-play provider of an essential consumable for EAF steel producers, the fastest-growing sector of the steel industry

According to WSA, EAF steelmaking grew at an annual pace of approximately 14% in 2017, compared with 4% for steelmaking overall. As a result of the increasing global availability of steel scrap and the more resilient, high-variable cost and environmentally friendly EAF model, we expect EAF

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producers to continue to grow at a faster rate than BOF producers globally. Additionally, EAF producers are increasingly able to utilize higher quality scrap and iron units, their two primary raw materials, to produce higher quality steel grades and capture market share from BOF producers, while maintaining a favorable cost structure. According to the WSA, in EMEA and the Americas, which together made up 93% of our 2018 net sales, EAF producers have increased market share from approximately 37% in 2000 to 49% in 2017, reflecting growth from 190 million MT to 257 million MT. In APAC, which made up approximately 7% of our 2018 net sales, government initiatives in China are expected to result in a greater use of the EAF method in steelmaking despite the historical dominance of BOF producers. These initiatives are the result of efforts to eliminate excess steelmaking production capacity and to improve environmental conditions. The EAF method produces approximately 25% of the carbon dioxide (or CO₂) emissions of a BOF facility and does not require the smelting of virgin iron ore or the burning of coal. Additionally, as a result of significantly increased steel production in China since 2000, the supply of Chinese scrap is expected to increase substantially, which may result in lower scrap prices and provide the Chinese steel manufacturing industry with local scrap feedstock that was not historically available. We believe these trends will allow EAF steel producers to increase their market share and grow at a faster rate than BOF steel producers, resulting in increasing demand for graphite electrodes.

We have capital-efficient growth opportunities available to us

The graphite electrode industry responded to oversupplied markets from 2011 to 2015 with production capacity rationalization and consolidation, and after the normalization of the market for EAF steel in 2017. We believe the lead time from initial permitting to full production of a greenfield graphite electrode manufacturing facility would be approximately three to five years and cost approximately \$10,000 per MT. Similarly, brownfield development is complicated by significant capital costs and space and process constraints. Only one new greenfield graphite electrode facility outside of China has been built since the 1980s and only one significant brownfield expansion has occurred, reflecting the historical difficulty of adding further graphite electrode production capacity. As a result of this long and uncertain time horizon to build new plants, we believe only a few companies have the necessary technology and expertise to meet the rising demand for graphite electrodes.

Our current facilities are modern, strategically located and well-maintained, providing us with ample operational optimization capabilities. In 2018, we completed the expansion of our production capacity by approximately 20%, to 202,000 MT, through strategic capital investments and operational improvements. As a result of our prior operational improvement activities, we are able to achieve this large capacity increase with specific, highly targeted capital investments. These expansions will provide additional fixed cost absorption and drive further efficiencies of scale across our manufacturing base. We also have our currently warm idled St. Marys facility, which remains a viable long-term option. Currently, St. Marys is graphitizing and machining some semi-finished electrodes sourced from Monterrey in order to leverage existing infrastructure.

We believe we have the industry's most efficient production platform of high production capacity assets with substantial vertical integration

Based on our experience, high capacity manufacturing facilities can have operating costs of more than \$1,000 per MT lower than low capacity manufacturing facilities. Our previous restructuring activities included the closures of our lower capacity manufacturing facilities in South Africa and Brazil and the idling of our St. Marys facility, which together accounted for approximately 35% of our previous production capacity. Our restructuring actions have eliminated a significant amount of annual fixed manufacturing costs and maintenance capital expenditure requirements since 2012. These actions allow us to run our Calais, Pamplona and Monterrey plants at a high level of capacity utilization. Since 2014, we have also improved our manufacturing processes and made strategic investments across our

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plant network, which have improved productivity while also reducing our energy and raw material consumption. Following our footprint optimization, we are producing a greater quantity of graphite electrodes from our three primary operating facilities than we did from our six operating facilities in 2012. In 2017, the Calais and Pamplona plants exceeded previous annual record production levels by 15% and 12%, respectively, and production at the Monterrey plant was 12% higher than the highest annual production level during the past 10 years. Our recently completed debottlenecking initiative added approximately 20% to our capacity at a very low cost per MT. We believe that the optimization of our plant network will continue to drive improved fixed cost absorption.

Moreover, our Seadrift, Calais, Pamplona, Monterrey and St. Marys facilities each provide unique advantages for us. Seadrift provides a substantial portion of our petroleum needle coke supply needs internally and at a competitive cost and allows us to maximize capacity utilization more efficiently than competitors, who may be more constrained by petroleum needle coke supply. Seadrift is one of only five petroleum needle coke facilities in the world outside of China, and we believe it is the second largest petroleum needle coke producer in the world. We also believe that Calais, Pamplona and Monterrey are three of the five highest capacity graphite electrode facilities in the world (excluding China), allowing for significant operating leverage. We believe our facilities have significant cost advantages given their scale and access to low cost, reliable energy sources. While much of the production capacity rationalized during the downturn was permanently shut down, we temporarily idled our St. Marys facility and retain the option to restart it.

We are the only petroleum needle coke producer in the world specifically focused on the production of graphite electrodes

Our production of petroleum needle coke specifically for graphite electrodes provides us the opportunity to produce super premium petroleum needle coke of the highest quality and allows us to tailor graphite electrodes for customer requirements. Seadrift has 140,000 MT of petroleum needle coke production capacity, which we believe makes it the second largest petroleum needle coke producer in the world. We produced approximately 110,000 MT of needle coke in 2018. We expect to produce approximately 125,000 MT in 2019 as we do not have a planned maintenance outage in 2019 and we expect a modest productivity enhancement related to our efficiency improvement project. We believe that no petroleum needle coke production capacity has been added outside of China for at least 10 years, given high capital costs and technological barriers. Additionally, the growing petroleum needle coke demand from manufacturers of lithium-ion batteries for electric vehicles has led to a limited supply of petroleum needle coke available to graphite electrode manufacturers. Sourcing the majority of our petroleum needle coke internally allows us to offer our customers certainty of supply, further enhancing our competitive position and supporting our three-to five-year, take-or-pay contracts strategy. To align with our three- to five-year contract profile, we have hedged the decant oil required to produce all of the graphite electrodes sold under these contracts, providing us with substantial visibility into our future raw material costs. We believe our use of petroleum needle coke is a further competitive advantage, as the use of pitch needle coke, an alternative raw material, results in longer bake times during graphite electrode production, significantly affecting graphite electrode production rates and cost.

Our graphite electrodes and petroleum needle coke are among the highest quality in the industry

After the divestiture of our non-core legacy Engineered Solutions businesses in 2016 and 2017, we focused on our core competency of graphite electrode production and generated approximately \$60 million in cash proceeds and release of working capital from these divestitures. Our restructured and simplified business model has reduced our annual overhead expenses significantly since 2012, allowing us to redeploy the savings into our graphite electrode business. We have identified and implemented mechanical and chemical improvements to our electrodes, invested in the capability to

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produce super premium petroleum needle coke needed for high-margin UHP graphite electrodes, and optimized our production of pins at our Monterrey plant, which are a critical component used to connect and fasten graphite electrodes together in a furnace. By producing pins at our Monterrey plant, we are able to realize meaningful fixed-cost synergies with our graphite electrode production on site. As a result, we believe the quality and the consistency of our electrodes is unrivaled in North America and EMEA and on par with that of any producer globally. We have seen customer satisfaction rise to ten-year highs at a time when the industry has been focused on production capacity rationalization rather than quality. We believe the durability and infrequent breakage of our graphite electrodes create operating efficiencies and value opportunities for our customers. We also believe we have a competitive advantage in offering customers our ArchiTech Furnace Productivity System (or ArchiTech), which we believe is the most advanced support and technical service platform in the graphite electrode industry. ArchiTech, which has been installed in customer furnaces around the world, enables our engineers to work with our customers seamlessly to maximize the performance of their furnaces and provide real-time diagnostics and troubleshooting. We believe our customers value our high quality products and customer service, and have provided us with opportunities to expand our business with them as a result.

Our experienced executive leadership and general managers and flexible workforce have positioned us for future earnings growth

Our seasoned leadership is committed to earnings growth. We have undertaken strategic investments to increase our production capacity in a capital-efficient manner while reducing our cost position. Our executive and manufacturing leadership have led manufacturing companies through many cycles and are focused on positioning us for profitable growth in any environment. Our operational improvement and debottlenecking initiative is completed and increased capacity by approximately 20%, or 35,000 MT. Currently, our warm idled St. Marys facility is finishing some electrodes sourced from other facilities to provide flexibility to our overall manufacturing footprint. We could ramp up production at St. Marys if required to support our customers. If restarted, St. Marys would add approximately 28,000 MT of annual capacity.

Additionally, since our acquisition by Brookfield, we have reorganized our manufacturing facilities as profit centers. We use LEAN manufacturing techniques, which focus on the constant elimination of waste from the manufacturing process. We also rely on Six Sigma methods, a set of management techniques intended to improve quality by significantly reducing the probability that an error or defect will occur. We believe the LEAN and Six Sigma initiatives have increased overall utilization by optimizing our plant production capacity and controlled costs while also improving quality. We also redesigned general manager incentive plans to reward efficiency gains. Similarly, our labor force is incentivized to drive efficiencies through country-specific labor incentive plans.

Risk factors

Our business is subject to numerous risks. See "Risk factors" beginning on page 15. In particular, our business may be adversely affected by, among other factors:

the possibility that the cyclical nature of our business and the selling prices of our products may lead to periods of reduced profitability and net losses in the future;

the possibility that we may be unable to implement our business strategies, including our initiative to secure and maintain longer-term take-or-pay customer contracts, in an effective manner;

the fact that pricing for graphite electrodes has historically been cyclical and, although current prices are relatively high, the price of graphite electrodes may decline in the future;

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the sensitivity of our business and operating results to economic conditions;

our dependence on the global steel industry generally and the EAF steel industry in particular;

the possibility that global graphite electrode overcapacity may adversely affect graphite electrode prices;

the competitiveness of the graphite electrode industry;

our dependence on the supply of petroleum needle coke;

our dependence on supplies of raw materials (in addition to petroleum needle coke) and energy; and

the possibility that our manufacturing operations are subject to hazards.

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The offering

Common stock offered by the selling stockholder	17,500,000 shares, assuming no exercise by the underwriters of their options to purchase an additional 2,625,000 shares of common stock from the selling stockholder.
Common stock to be issued and outstanding after this offering	290,537,612 shares.
Use of proceeds	We will not receive any proceeds from the sale of our common stock by the selling stockholder named in this prospectus.
Dividend policy	We currently pay a quarterly cash dividend of \$0.085 per share, or an aggregate of \$0.34 per share on an annualized basis. See "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. Our ability to pay dividends will depend upon many factors, including our financial position and liquidity, results of operations, legal requirements, restrictions that may be imposed by the terms of our current and future credit facilities and other debt obligations and other factors deemed relevant by our board of directors. For further discussion of the factors that may affect our business and our ability to pay dividends, see "Risk factors Risks related to our business and industry" and "Risk factors Risks related to our common stock We may not pay cash dividends on our common stock."
Risk factors	Please read the section entitled "Risk factors" beginning on page 15 for a discussion of some of the factors you should carefully consider before deciding to invest in our common stock.
NYSE listing and symbol	Our common stock is listed on the NYSE under the symbol "EAF."
The number of shares of common stock to be issued and outstanding after the completion of this offering is based on 290,537,612 shares of common stock issued and outstanding as of February 15, 2019, and excludes an additional 15,000,000 shares reserved for future issuance under our Omnibus Equity Incentive Plan.	

Except as otherwise indicated, all information in this prospectus assumes no exercise by the underwriters of their option to purchase up to an additional 2,625,000 shares of common stock from the selling stockholder.

Table of Contents**Summary historical consolidated financial and other data**

The following tables present selected consolidated financial information of the Company. You should read these tables along with "Management's discussion and analysis of financial condition and results of operations," "Business" and our audited consolidated financial statements and the related notes included elsewhere in this prospectus.

The summary consolidated statement of operations data for the years ended December 31, 2018, 2017 and 2016 and the summary consolidated balance sheet data at December 31, 2018 and 2017 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results to be expected in the future.

	For the year ended December 31,		
	2018	2017	2016
	(in thousands, except per share amounts)		
Statement of operations data:			
Net sales	\$ 1,895,910	\$ 550,771	\$ 437,963
Income (loss) from continuing operations	853,888	14,212	(108,869)
Net income (loss)	854,219	7,983	(235,843)
Basic and diluted earnings (loss) per common share(a):			
Income (loss) from continuing operations per share(a)	\$ 2.87	\$ 0.05	\$ (0.36)
Weighted average common shares outstanding(a)	297,748	302,226	302,226
Dividends per common share(b)	\$ 0.77	\$	\$
Balance sheet data (at period end):			
Total assets	\$ 1,505,491	\$ 1,199,103	\$ 1,172,276
Other long-term obligations(c)	72,519	68,907	82,148
Total long-term debt	2,050,311	322,900	356,580
Other financial data:			
Net cash provided by operating activities	\$ 836,603	\$ 36,573	\$ 22,815
Net cash used in investing activities	(67,295)	(2,199)	(10,471)
Net cash (used in) provided by financing activities	(731,044)	(32,995)	(8,317)

(a) Data gives effect to the 3,022,259.23-for-1 stock split on our common stock effected on April 12, 2018.

(b) Calculated by total dividends paid of \$2,294,265 divided by weighted average shares outstanding. \$2,022,000 of these dividends were declared and paid to Brookfield prior to our IPO. All other dividends were declared and paid to all common stockholders.

(c) Represents pension and post-retirement benefits and related costs and miscellaneous other long-term obligations.

Key financial measures	For the year ended December 31,		
	2018	2017	2016
	(in thousands)		
EBITDA from continuing operations(1)	\$ 1,102,625	\$ 97,884	\$ (12,251)
Adjusted EBITDA from continuing operations(1)	\$ 1,205,021	\$ 95,806	\$ (2,898)

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Key operating metrics	For the year ended December 31,		
	2018	2017	2016
	(in thousands, except price data)		
Sales volume (MT)(2)	185	172	163
Weighted average realized price(3)	\$ 9,937	\$ 2,945	\$ 2,459
Production volume (MT)(4)	179	166	151
Production capacity excluding St. Marys during idle period (MT)(5)(6)	180	167	176
Capacity utilization excluding St. Marys during idle period(5)(7)	99%	99%	85%
Total production capacity(6)(8)	208	195	195
Total capacity utilization(7)(8)	86%	85%	77%

- (1) See below for more information and a reconciliation of EBITDA and adjusted EBITDA to net income (loss), the most directly comparable financial measure calculated and presented in accordance with GAAP.
- (2) Sales volume reflects the total volume of graphite electrodes sold for which revenue has been recognized during the period. See below for more information on our key operating metrics.
- (3) Weighted average realized price reflects the total revenues from sales of graphite electrodes for the period divided by the graphite electrode sales volume for that period. See below for more information on our key operating metrics.
- (4) Production volume reflects graphite electrodes produced during the period. See below for more information on our key operating metrics.
- (5) The St. Marys, Pennsylvania facility was temporarily idled effective the second quarter of 2016 except for the machining of semi-finished products sourced from other plants. In the first quarter of 2018, our St. Marys facility began graphitizing a limited amount of electrodes sourced from our Monterrey, Mexico facility.
- (6) Production capacity reflects expected maximum production volume during the period under normal operating conditions, standard product mix and expected maintenance downtime. Actual production may vary. See below for more information on our key operating metrics.
- (7) Capacity utilization reflects production volume as a percentage of production capacity. See below for more information on our key operating metrics.
- (8) Includes graphite electrode facilities in Calais, France; Monterrey, Mexico; Pamplona, Spain and St. Marys, Pennsylvania.

Non-GAAP financial measures

In addition to providing results that are determined in accordance with GAAP, we have provided certain financial measures that are not in accordance with GAAP. EBITDA from continuing operations and adjusted EBITDA from continuing operations are non-GAAP financial measures. We define EBITDA from continuing operations, a non-GAAP financial measure, as net income or loss plus interest expense, minus interest income, plus income taxes, discontinued operations and depreciation and amortization from continuing operations. We define adjusted EBITDA from continuing operations as EBITDA from continuing operations plus any pension and other post-employment benefit (or OPEB) plan expenses, impairments, rationalization-related charges, IPO expenses, acquisition and proxy contest costs, non-cash gains or losses from foreign currency remeasurement of non-operating liabilities in our foreign subsidiaries where the functional currency is the U.S. dollar, related party Tax Receivable Agreement expense, stock-based compensation and non-cash fixed asset write-offs. Adjusted EBITDA from continuing

operations is the primary metric used by our management and our board of

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directors to establish budgets and operational goals for managing our business and evaluating our performance.

We monitor adjusted EBITDA from continuing operations as a supplement to our GAAP measures, and believe it is useful to present to investors, because we believe that it facilitates evaluation of our period-to-period operating performance by eliminating items that are not operational in nature, allowing comparison of our recurring core business operating results over multiple periods unaffected by differences in capital structure, capital investment cycles and fixed asset base. In addition, we believe adjusted EBITDA from continuing operations and similar measures are widely used by investors, securities analysts, ratings agencies, and other parties in evaluating companies in our industry as a measure of financial performance and debt-service capabilities.

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

adjusted EBITDA from continuing operations does not reflect changes in, or cash requirements for, our working capital needs;

adjusted EBITDA from continuing operations does not reflect our cash expenditures for capital equipment or other contractual commitments, including any capital expenditure requirements to augment or replace our capital assets;

adjusted EBITDA from continuing operations does not reflect the interest expense or the cash requirements necessary to service interest or principal payments on our indebtedness;

adjusted EBITDA from continuing operations does not reflect tax payments that may represent a reduction in cash available to us;

adjusted EBITDA from continuing operations does not reflect expenses relating to our pension and OPEB plans;

adjusted EBITDA from continuing operations does not reflect impairment of long-lived assets and goodwill;

adjusted EBITDA from continuing operations does not reflect the non-cash gains or losses from foreign currency remeasurement of non-operating liabilities in our foreign subsidiaries where the functional currency is the U.S. dollar;

adjusted EBITDA from continuing operations does not reflect IPO expenses;

adjusted EBITDA from continuing operations does not reflect acquisition and proxy costs;

adjusted EBITDA from continuing operations does not reflect related party Tax Receivable Agreement expense;

adjusted EBITDA from continuing operations does not reflect rationalization-related charges, stock-based compensation or the non-cash write-off of fixed assets; and

other companies, including companies in our industry, may calculate EBITDA from continuing operations and adjusted EBITDA from continuing operations differently, which reduces its usefulness as a comparative measure.

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In evaluating EBITDA from continuing operations and adjusted EBITDA from continuing operations, you should be aware that in the future, we will incur expenses similar to the adjustments in this presentation. Our presentations of EBITDA from continuing operations and adjusted EBITDA from continuing operations should not be construed as suggesting that our future results will be unaffected by these expenses or any unusual or non-recurring items. When evaluating our performance,

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you should consider EBITDA from continuing operations and adjusted EBITDA from continuing operations alongside other financial performance measures, including our net income (loss) and other GAAP measures.

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

(in thousands)	For the year ended December 31,		
	2018	2017	2016
Net income (loss)	\$ 854,219	\$ 7,983	\$ (235,843)
Add:			
Discontinued operations	(331)	6,229	126,974
Depreciation and amortization	66,413	64,025	77,614
Interest expense	135,061	30,823	26,914
Interest income	(1,657)	(395)	(358)
Income taxes	48,920	(10,781)	(7,552)
EBITDA from continuing operations	1,102,625	97,884	(12,251)
Adjustments:			
Pension and OPEB plan (gain) expenses(1)	3,893	(1,611)	(626)
Rationalization-related (gains)/charges(2)		(3,970)	5,209
IPO expenses(3)	5,173		
Acquisition and proxy contests costs(4)		886	8,036
Non-cash loss (gain) on foreign currency remeasurement(5)	818	1,731	(5,465)
Stock-based compensation(6)	1,152		
Non-cash fixed asset write-off(7)	4,882	886	2,199
Related party Tax Receivable Agreement expense(8)	86,478		
Adjusted EBITDA from continuing operations	\$ 1,205,021	\$ 95,806	\$ (2,898)

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- (1) Service and interest cost of our OPEB plans. Also includes a mark-to-market loss (gain) for plan assets as of December of each year. See "Management's discussion and analysis of financial condition and results of operations Components of results of operations Selling and administrative expenses" for more information.
- (2) Costs associated with rationalizations in our graphite electrode manufacturing operations and in the corporate structure. They include severance charges, contract termination charges, write-off of equipment and (gain)/loss on sale of manufacturing sites.
- (3) Legal, accounting, printing and registration fees associated with the initial public offering.
- (4) Costs associated with the merger transaction with Brookfield, resulting in change in control compensation expenses.
- (5) Non-cash (gain) loss from foreign currency remeasurement of non-operating liabilities of our non-U.S. subsidiaries where the functional currency is the U.S. dollar.
- (6) Non-cash expense for stock-based compensation grants.
- (7) Non-cash fixed asset write-off recorded for obsolete manufacturing equipment.
- (8) Non-cash expense for future payment to the selling stockholder for tax assets that are expected to be utilized.

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Key Operating Metrics

Key operating metrics consist of sales volume, weighted average realized price, production volume, production capacity and capacity utilization.

Sales volume reflects the total volume of graphite electrodes sold for which revenue has been recognized during the period. For a discussion of our revenue recognition policy, see "Management's discussion and analysis of financial condition and results of operations - Critical accounting policies - Revenue recognition." Weighted average realized price reflects the total revenues from sales of graphite electrodes for the period divided by the graphite electrode sales volume for that period. Sales volume and weighted average realized price help investors understand the factors that drive our net sales.

Production volume reflects graphite electrodes produced during the period. Production capacity reflects expected maximum production volume during the period under normal operating conditions, standard product mix and expected maintenance downtime. Capacity utilization reflects production volume as a percentage of production capacity. Production volume, production capacity and capacity utilization help us understand the efficiency of our production, evaluate cost of sales and consider how to approach our contract initiative.

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Risk factors

Investing in our common stock involves a high degree of risk. You should carefully consider the following risk factors, as well as other information contained in this prospectus, before deciding to invest in our common stock. 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 trading price of our common stock could decline and you could lose all or part of your investment.

Risks related to our business and industry

Our business is cyclical and the selling prices of our products may lead to periods of reduced profitability and net losses in the future.

We have a history of significant net losses, including a net loss of \$235.8 million for the year ended December 31, 2016. Our ability to maintain profitability depends on a number of factors, including the growth rate of the graphite electrode industry, the price of our products, the cost to produce our products, the competitiveness of our products and the production capacity at our existing plants. We may incur significant losses in the future for a number of reasons, including due to the other risks described in this prospectus, and we may encounter unforeseen expenses, difficulties, complications and delays and other unknown events. In addition, as a public company, we now incur significant legal, accounting and other expenses that we did not incur as a private company. As a result, our operations may not maintain profitability in the future and, even if we do maintain profitability, we may not be able to increase it.

We may be unable to implement our business strategies, including our initiative to secure and maintain three- to five-year take-or-pay customer contracts, in an effective manner.

Our future financial performance and success largely depend on our ability to implement our business strategies for growth successfully. We have undertaken, and will continue to undertake, various business strategies to sell a significant portion of our production capacity through three- to five-year, take-or-pay contracts, and improve operating efficiencies and generate cost savings. We cannot assure you that we will successfully implement our business strategies or that implementing these strategies will sustain or improve and not harm our results of operations. In particular, our ability to implement our strategy to enter into three- to five-year take-or-pay contracts successfully is subject to certain risks, including customers seeking to renegotiate key terms of their contracts, such as pricing and specified volume commitments, in the event market conditions change during the contract term; our inability to extend contracts when they expire; and a disruption in our access to Seadrift-produced petroleum needle coke, which we will rely on, in part, to deliver the contracted volumes under the contracts. As a result, we cannot assure you that we will successfully implement this strategy or realize the anticipated benefits of these contracts. In addition, the costs involved in implementing our strategies may be significantly greater than we currently anticipate. For example, our ability to make other operational improvements as planned may be delayed or interrupted by the need to obtain environmental and other regulatory approvals, the availability of labor and materials, unforeseen hazards, such as weather conditions, and other risks customarily associated with construction projects.

Our business strategies are based on our assumptions about future demand for our products and on our continuing ability to produce our products profitably. Each of these factors depends, among other things, on our ability to finance our operations, maintain high-quality and efficient manufacturing operations, respond to competitive and regulatory changes, access quality raw materials in a cost-effective and timely manner, and retain and attract highly skilled technical, managerial, marketing and finance personnel. Any failure to develop, revise or implement our business strategies in a timely and effective manner may adversely affect our business, financial condition, results of operations or cash flows.

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Pricing for graphite electrodes has historically been cyclical and current prices are relatively high, however, the price of graphite electrodes may 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. Historically, between 2008 and 2017, our weighted average realized price of graphite electrodes was approximately \$4,500 per MT (on an inflation-adjusted basis using constant 2018 dollars).

During the most recent demand trough, our weighted average realized price of graphite electrodes fell to approximately \$2,500 per MT in 2016, on an inflation-adjusted basis using constant 2018 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 production and constrained supply of needle coke, graphite electrode prices reached record highs in 2018. We have executed three- to five-year take-or-pay contracts, representing approximately 60% to 65% of our production capacity from 2018 through 2022. The weighted average contract price for the contracted volumes over the next four years is approximately \$9,700 per MT. If spot prices remain above our contract prices, our profitability may be negatively impacted compared to what it would have been if we had sold the contracted volume in the spot market. Pricing for graphite electrodes has historically been cyclical and current prices are relatively high, however, the price of graphite electrodes may decline in the future. Our business, financial condition and operating results could be materially and adversely affected to the extent prices for graphite electrodes decline in the future to or below our historical weighted average realized price levels.

Our business and operating results have been and will continue to be sensitive to economic conditions and a downturn in economic conditions may materially adversely affect our business.

Our operations and performance are materially affected by global and regional economic conditions. As described further below, we are dependent on the steel industry, which historically has been highly cyclical and is affected by general economic conditions. An economic downturn may reduce customer demand, reduce prices for our products or inhibit our ability to produce our products, which would negatively affect our operating results. Our business and operating results have also been and will continue to be sensitive to declining consumer and business confidence; fluctuating commodity prices; volatile exchange rates and other challenges that can affect the economy. Our customers may experience deterioration of their businesses, cash flow shortages and difficulty obtaining financing, leading them to delay or cancel plans to purchase our products or seek to renegotiate terms of their supply contracts, and they may not be able to fulfill their obligations to us in a timely fashion. Further, suppliers and other business partners may experience similar conditions, which could impact their ability to fulfill their obligations to us. Also, it could be difficult to find replacements for business partners without incurring significant delays or cost increases. These events would negatively impact our revenues and results of operations.

We are dependent on the global steel industry generally and the EAF steel industry in particular, and a downturn in these industries may materially adversely affect our business.

We sell our products primarily to the EAF steel production industry. The steel industry historically has been highly cyclical and is affected significantly by general economic conditions. 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. In particular, EAF steel production

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declined approximately 17% from 2008 to 2009 as a result of that general economic downturn and deterioration in financial markets.

In addition, EAF steel production declined approximately 10% from 2011 to 2015 due to global steel production overcapacity driven largely by Chinese BOF steel production. Since 2016, however, the EAF steel market has rebounded strongly and resumed its long-term growth trajectory. 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.

Global graphite electrode overcapacity has adversely affected graphite electrode prices in the past, and may adversely affect them again in the future, which could negatively impact our sales, margins and profitability.

Overcapacity in the graphite electrode industry has adversely affected pricing and may do so again. The rapid growth of Chinese steel production after 2010, which was primarily produced from BOF steelmaking, created a significant global oversupply of steel. Chinese steel exports gained market share from EAF producers, creating graphite electrode industry oversupply and inventory de-stocking in this period. Historically, between 2008 and 2017, our weighted average realized price of graphite electrodes was approximately \$4,500 per MT (on an inflation-adjusted basis using constant 2018 dollars). During the most recent demand trough, our weighted average realized price fell to approximately \$2,500 per MT in 2016. Although Chinese steel production has decreased since 2016 as a result of the enactment of certain Chinese governmental initiatives, any significant future growth in Chinese BOF steel production could once again lead to an oversupply of steel, which would adversely affect the price of graphite electrodes.

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. 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 collectively make up over 90% of our market, 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, product 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 as well as product innovation. Competition could prevent implementation of price increases, require price reductions or require increased spending on research and development, marketing and sales that could adversely affect us. In such a competitive market, changes in market conditions, including customer demand and technological development, 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 recent disruptions in the supply of petroleum needle coke continue or worsen for an extended period.

Petroleum needle coke is the primary raw material used in the production of graphite electrodes. The supply of petroleum needle coke has been limited starting in the second half of 2017 as the demand for petroleum needle coke has outpaced supply due to increasing demand for petroleum needle coke for use in the production of lithium-ion batteries used in electric vehicles. Seadrift currently provides approximately 70% of our current petroleum needle coke requirements, and we purchase the remaining 30% from a variety of external sources. We plan to rely on Seadrift-produced

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petroleum needle coke to support the production substantially all of the contracted volumes of graphite electrodes under our three- to five-year take-or-pay contracts. As a result, a disruption in Seadrift's production of petroleum needle coke could adversely affect our ability to achieve the anticipated benefits of these contracts if we are forced to purchase petroleum needle coke from external sources at a higher cost to support the production of these contracted volumes. Moreover, although estimates vary as to the duration of this period of tight petroleum needle coke supply, if the current market shortage of petroleum needle coke continues or worsens, we may be unable to acquire sufficient amounts of petroleum needle coke from external sources to support the 30% of our needle coke requirements currently used in the production of graphite electrodes for sale in the spot market. As a result, a continued or worsening 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 dependent on supplies of raw materials (in addition to petroleum needle coke) and energy. Our results of operations could deteriorate if those supplies increase in cost or are substantially disrupted for an extended period.

We purchase raw materials and energy 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 and energy 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 (or, in the case of energy suppliers, extended hot or cold weather);

interruptions or cessations 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, particularly natural gas, 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.

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 strategies may not be available or successful in eliminating our exposure. A substantial increase in raw material or energy prices that cannot be mitigated or passed on to customers or a continued interruption in supply, particularly in the supply of decant oil or energy, would have a material adverse effect on our business, financial condition, results of operations or 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

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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.

Stringent health, safety and environmental 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 Chemicals Regulation (or REACH), 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, in the imposition of substantial fines and criminal sanctions and sometimes 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 and may become subject to material liabilities in the future for the investigation and cleanup of contaminated properties, including 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, 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 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 (or 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 required reporting of greenhouse gas emissions from certain large sources beginning in 2011. Further measures, in the 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 (or 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 Environment."

It is possible that some form of regulation of GHG emissions will also be introduced in the future in other countries in which we operate or market our products. Regulation of GHG emissions 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

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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.

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;

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 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;

inability to determine or satisfy legal requirements, effectively enforce contract or legal rights, including our rights under our three- to five-year take-or-pay contracts, 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.

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

Changes in foreign currency exchange rates have in the past resulted, and may in the future result, in significant gains or losses. When the currencies of non-U.S. countries in which we have a

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manufacturing facility decline (or increase) in value relative to the U.S. dollar, this has the effect of reducing (or increasing) the U.S. dollar equivalent cost of sales and other expenses with respect to those facilities. In certain countries in which we have manufacturing facilities, and in certain instances where we price our products for sale in export markets, we sell in currencies other than the dollar. Accordingly, increases (or declines) in value in these currencies relative to the U.S. dollar have the effect of increasing (or reducing) our net sales. The result of these effects is to increase (or decrease) operating profit and net income. Additionally, as part of our cash management, we have non-U.S. dollar-denominated intercompany loans between our subsidiaries. These loans are deemed to be temporary and, as a result, remeasurement gains and losses on these loans are recorded as currency gains and losses in other income (expense), net, on the Consolidated Statements of Income. We have in the past entered into, and may in the future enter into, foreign currency derivatives to attempt to manage exposure to changes in currency exchange rates. These hedges may be insufficient or ineffective in protecting against the impact of these fluctuations. We also may purchase or sell these financial instruments, and open and close hedges or other positions, at any time. Fluctuations in foreign currency exchange rates could materially harm our financial results.

Our results of operations could deteriorate if our manufacturing operations were substantially disrupted for an extended period for any reason, including equipment failure, 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 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 addition, our three operating manufacturing facilities are currently operating at a high level of production capacity utilization. As a result, in the event manufacturing operations are substantially disrupted at one of our operating facilities, we will not have the ability to increase production at our remaining operating facilities in order to compensate. To the extent any of these events occur, our business, financial condition and operating results could be materially and adversely affected.

Plant production capacity expansions may be delayed or may not achieve the expected benefits.

Our ability to complete future production capacity expansions, including the potential full restart of our St. Marys plant, may be delayed, interrupted or otherwise limited by the need to obtain environmental and other regulatory approvals, unexpected cost increases, availability of labor and materials, unforeseen hazards such as weather conditions, and other risks customarily associated with construction projects. For example, the potential full restart of our St. Marys plant will be substantially dependent on the availability of external sources of petroleum needle coke and market conditions. Moreover, the costs of these activities could have a negative impact on our results of operations, particularly until capacity utilization at the facility is sufficient to absorb the incremental costs of expansion. In addition, completed capacity expansions from our debottlenecking initiative may not achieve the expected benefits as a result of changes in market conditions, raw material shortages or other unforeseen contingencies.

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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 not be able to recruit or retain key management and plant operating personnel.

Our success is dependent on the management and leadership skills of our key management and plant operating personnel. Following the completion of our acquisition by Brookfield, our management team has been reorganized, including the establishment of new positions reporting directly to the chief executive officer, and significant competencies have been added to the management team to further strengthen our business. The loss of any member of our reorganized key management team and personnel or an inability to attract, retain, develop and maintain additional personnel could prevent us from implementing our business strategy. In addition, our future growth and success also depend on our ability to attract, train, retain and motivate skilled managerial, sales, administration, operating and technical personnel. The loss of one or more members of our key management or plant operating personnel, or the failure to attract, retain and develop additional key personnel, 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, 2018, approximately 846 employees, or 61%, of our worldwide employees, are covered by collective bargaining or similar agreements. As of December 31, 2018, approximately 691 employees, or 50%, of our worldwide employees, were covered by agreements that expire, or are subject to renegotiation, at various times through December 31, 2019. 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 during the past decade, 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.

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We may divest or acquire businesses, which could require significant management attention or disrupt our business.

We may divest or acquire businesses to rationalize or expand our businesses and enhance our cash flows. For example, on February 26, 2016, we announced a strategic review of our Engineered Solutions businesses to better direct its resources and simplify its operations. The disposition of those businesses was substantially complete by the end of the third quarter of 2017.

Any acquisitions that we are able to identify and complete may involve a number of risks, including:

our inability to successfully or profitably integrate, operate, maintain and manage our newly acquired operations or employees;

the diversion of our management's attention from our existing business;

possible material adverse effects on our results of operations during the integration process;

becoming subject to contingent or other liabilities, including liabilities arising from events or conduct predating the acquisition that were not known to us at the time of the acquisition; and

our possible inability to achieve the intended objectives of the transaction, including the inability to achieve cost savings and synergies.

Any divestitures may also involve a number of risks, including the diversion of management's attention, significant costs and expenses, the loss of customer relationships and cash flow, and the disruption of the affected business or business operations. Failure to timely complete or to consummate an acquisition or a divestiture may negatively affect the valuation of the affected business or business operations or result in restructuring charges.

We have significant goodwill on our balance sheet that is sensitive to changes in the market, which could result in impairment charges.

We have \$171.1 million of goodwill on our balance sheet as of December 31, 2018. Our annual impairment test of goodwill was performed in the fourth quarter of 2018. The estimated fair values of our reporting units were based on discounted cash flow models derived from internal earnings forecasts and assumptions. The assumptions and estimates used in these valuations incorporated the current and expected economic environment. In that annual impairment test, our graphite electrode reporting unit's fair value exceeded its carrying value. A deterioration in the global economic environment or in any of the input assumptions in our calculation could adversely affect the fair value of our reporting units and result in further impairment of some or all of the goodwill on the balance sheet.

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 failures, 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

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measures, these steps may be insufficient or ineffective and a system failure or data security breach could have a material adverse effect on our business, financial condition, results of operations or cash flows.

Further, 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 European Union's General Data Protection Regulation (GDPR), which became enforceable on May 25, 2018, introduced a number of new 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 European Union may impose administrative fines for non-compliance of up to €20,000,000 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.

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. 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.

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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.

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Significant changes in our jurisdictional earnings mix or in the tax laws of those jurisdictions could adversely affect our business, financial condition, results or operations and cash flows.

Our future tax rates may be adversely affected by a number of factors, including the enactment of new tax legislation, other changes in tax laws or the interpretation of tax laws, changes in the estimated realization of our net deferred tax assets (arising, among other things, from tax loss carryforwards and our acquisition by Brookfield), changes to the jurisdictions in which profits are determined to be earned and taxed, adjustments to estimated taxes upon finalization of various tax returns, increases in expenses that are not deductible for tax purposes, including write-offs of acquired in-process R&D and impairment of goodwill in connection with acquisitions, changes in available tax credits and additional tax or interest payments resulting from tax audits with various tax authorities. Losses for which no tax benefits can be recorded could materially impact our tax rate and its volatility from period to period. Any significant change in our jurisdictional earnings mix or in the tax laws in those jurisdictions could increase our tax rates and adversely impact our financial results in those periods.

Recent tax legislation could adversely affect us or our stockholders.

Recent tax legislation, the Tax Cuts and Jobs Act (or the Tax Act), was enacted on December 22, 2017. The Tax Act significantly revises the U.S. corporate income tax regime by, among other things:

lowering corporate income tax rates;

temporarily allowing for immediate expensing of expenditures for certain tangible property;

repealing the corporate alternative minimum tax;

implementing a 100% dividends-received deduction on certain dividends from 10% or greater owned foreign subsidiaries;

imposing an income tax on deemed repatriated earnings of foreign subsidiaries generally as of December 31, 2017 (payable at reduced rates and potentially over an eight year period);

imposing tax at a reduced rate on certain income derived by foreign corporate subsidiaries in excess of a deemed return on tangible assets (i.e., tax on "global intangible low-taxed income" or GILTI);

imposing limitations on the ability to deduct interest expense and utilize net operating losses (or NOLs); and

instituting certain proposals to limit base erosion (including the "base erosion anti-abuse tax" or BEAT, and limitations on the deductibility of certain related-party payments).

Although we currently anticipate that the Tax Act and the accompanying changes in the corporate tax rate and calculation of taxable income will have a favorable effect on our financial condition, profitability and cash flows, the overall implications of the Tax Act at this time are uncertain, and it is not possible to predict the full effect of the Tax Act on our business and operations. Thus, the Tax Act and future implementing regulations, administrative guidance or interpretations of the legislation may have unanticipated adverse effects on us or our stockholders.

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 IPO, we entered into a tax receivable agreement (or the TRA) that provides the right to receive future payments from us to certain of our pre-IPO stockholders (or the Existing Stockholders) 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 NOLs, previously taxed income under

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Section 959 of the Internal Revenue Code of 1986, as amended from time to time (or the Code), foreign tax credits, and certain NOLs in GrafTech Switzerland S.A. (or, collectively, the Pre-IPO Tax Assets). In addition, we will pay interest on the payments we will make to the Existing Stockholders 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 LIBOR plus 1.00% per annum. The term of the TRA