GRAFTECH INTERNATIONAL LTD
Form 10-K
February 25, 2011
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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

for the fiscal year ended December 31, 2010

OR

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

for the transition period from to

Commission file number: 1-13888

GRAFTECH INTERNATIONAL LTD.

(Exact name of registrant as specified in its charter)

Delaware	27-2496053
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

12900 Snow Road Parma, Ohio 44130
(Address of principal executive offices) (Zip Code)
Registrant s telephone number, including area code: (216) 676-2000

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

Title of each class	**Name of each exchange on which registered**
Common stock, par value $.01 per share	New York Stock Exchange

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

None

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

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

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

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

Large Accelerated Filer x Accelerated Filer ¨ Non-Accelerated Filer ¨ Smaller reporting company ¨

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

The aggregate market value of our outstanding common stock held by non-affiliates, computed by reference to the closing price of our common stock on June 30, 2010, was approximately $1,756 million. On January 31, 2011, 145,476,226 shares of our common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain information required under Part III is incorporated by reference from the GrafTech International Ltd. Proxy Statement for the Annual Meeting of Stockholders to be held on May 26, 2011, which will be filed on or about April 14, 2011.

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PART I

Preliminary Notes

Important Terms. We use the following terms to identify various matters. These terms help to simplify the presentation of information in this Report.

Common stock means GTI common stock, par value $.01 per share.

Credit Agreement refers to the credit agreement providing for our senior secured credit facilities, as amended, or amended and restated at the relevant time. **Revolving Facility** refers to the revolving credit facility provided under the Credit Agreement, at the relevant time. On April 28, 2010, the Credit Agreement was amended and restated to, among other things, extend the maturity of the Revolving Facility to April 29, 2013, and add provisions to permit establishment of additional credit facilities thereunder.

Debentures means our 1-5/8% convertible senior debentures issued under an Indenture dated January 22, 2004 (as supplemented). During the second quarter of 2008, all Debentures were either redeemed or converted into Common Stock.

GrafTech Finance refers to GrafTech Finance Inc. only. GrafTech Finance is an indirect wholly-owned, special purpose finance subsidiary of GTI and the borrower under the Revolving Facility. GrafTech Finance was the issuer of the Senior Notes and was a guarantor of the Debentures.

GrafTech Global refers to GrafTech Global Enterprises Inc. only. GrafTech Global is an indirect wholly-owned subsidiary of GTI and the direct or indirect holding company for all of our operating subsidiaries. GrafTech Global is a guarantor of the Revolving Facility.

GTI refers to GrafTech International Ltd. only. GTI is our public parent company and the issuer of our publicly traded common stock registered under the Exchange Act and listed on the NYSE. GTI is a guarantor of the Revolving Facility.

Senior Notes means our 10.25% senior notes due 2012 issued under an Indenture dated February 15, 2002 (as supplemented, the **Senior Note Indenture**). On September 28, 2009, we redeemed all of the remaining outstanding Senior Notes.

Senior Subordinated Notes means our two senior subordinated promissory notes issued on November 30, 2010, in connection with the Seadrift Coke L.P. (Seadrift) and C/G Electrodes LLC (C/G) acquisitions, for an aggregate total face amount of $200 million. These senior subordinated notes are non-interest bearing and will mature in 2015. Because the Senior Subordinated Notes are non-interest bearing, we were required to record them at their present value (determined using an interest rate of 7.00%).

Subsidiaries refers to those companies that, at the relevant time, are or were majority owned or wholly-owned directly or indirectly by GTI or its predecessors to the extent that those predecessors activities related to the graphite and carbon business.

GTIH refers to GrafTech International Holdings, Inc. only. GTIH is our wholly-owned subsidiary through which we conduct most of our U.S. operations. GTIH is a guarantor of the Revolving Facility.

We, **us** or **our** refers to GTI and its subsidiaries collectively or, if the context so requires, GTI, GrafTech Global, GrafTech Finance or GTIH, individually. In November 2010, we completed the reorganization of our holding company structure pursuant to which we formed a new parent holding company, GrafTech Holdings Inc., which had been renamed GrafTech International Ltd. (new parent). Our former parent holding company, which had been named GrafTech International Ltd. (former parent) as part of the reorganization, was renamed GrafTech Holdings Inc. and became a direct wholly owned subsidiary of a new parent. Our new parent

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adopted the same certificate of incorporation (except for certain technical matters) and by-laws of our former parent; each share of common stock of our former parent was converted into one share of common stock of our new parent; and our new parent common stock was listed on the NYSE under our former parent s ticker symbol GTI.

Presentation of Financial, Market and Legal Data. References to cost in the context of our low cost advantages and strategies do not include the impact of special charges, expenses or credits, such as those related to investigations, lawsuits, claims, restructurings or impairments, or the impact of changes in accounting principles.

Unless otherwise noted, when we refer to **dollars** , we mean U.S. dollars. Unless otherwise noted, all dollars are presented in thousands.

References to spot prices for graphite electrodes mean prices under individual purchase orders (not part of an annual or other extended purchase arrangement) for near term delivery for standard size graphite electrodes used in large electric arc steel melting furnaces (sometimes called **melters** or **melter** applications) as distinct from, for example, a ladle furnace or a furnace producing non-ferrous metals.

Neither any statement made in this Report nor any charge taken by us relating to any legal proceedings constitutes an admission as to any wrongdoing.

Unless otherwise noted, market and market share data in this Report are our own estimates. Market data relating to the steel, electronics, semiconductor, solar, thermal management, transportation, petrochemical and other metals industries, our general expectations concerning such industries and our market position and market share within such industries, both domestically and internationally, are derived from trade publications relating to those industries and other industry sources as well as assumptions made by us, based on such data and our knowledge of such industries. Market and market share data relating to the graphite and carbon industry as well as information relating to our competitors, our general expectations concerning such industry and our market position and market share within such industry, both domestically and internationally, are derived from the sources described above and public filings, press releases and other public documents of our competitors as well as assumptions made by us, based on such data and our knowledge of such industry. Our estimates involve risks and uncertainties and are subject to change based on various factors, including those discussed under Risk Factors-Risks Relating to Us and Risk Factors Forward Looking Statements in this Report. We cannot guarantee the accuracy or completeness of this market and market share data and have not independently verified it. None of the sources mentioned above has consented to the disclosure or use of data in this Report.

Unless otherwise noted, references to **market shares** are based on sales volumes for the relevant year and references to **natural graphite products** do not include mined natural graphite flake.

The GRAFTECH logo, GRAFCELL®, GRAFOAM®, and GRAFIHX are our trademarks and trade names used in this report. This Report also contains trademarks and trade names belonging to other parties.

We make available, free of charge, on or through our web site, copies of our proxy statements, our annual reports on Form 10-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file them with, or furnish them to, the U.S. Securities and Exchange Commission (SEC). We maintain our website at http://www.graftech.com. The information contained on our web site is not part of this Report. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers that file electronically. Please see http://www.sec.gov for more information.

We have a code of ethics (which we call our Code of Conduct and Ethics) that applies to our principal executive officer, principal financial officer, principal accounting officers and controller, and persons performing similar functions, as well as our other employees, and which is intended to comply, at a minimum, with the listing standards of the New York Stock Exchange (NYSE) as well as the Sarbanes-Oxley

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Act of 2002 and the SEC rules adopted thereunder. A copy of our Code of Conduct and Ethics is available on our web site at http://www.graftech.com/getdoc/fd25921b-07b1-429f-86fa-397f0d0cb30d/Code-of -Conduct-and-Ethics.aspx. We intend to report timely on our website any disclosures concerning amendments or waivers of our Code of Conduct and Ethics that would otherwise require the filing of a Form 8-K with the SEC.

We also have corporate governance guidelines (which we call the Charter of the Board of Directors) which is available on our website at http://www.graftech.com/getdoc/6b8a3b4d-967c-4bdd-ab04-ea0011de0c91/GRAFTECH-INTERNATIONAL- LTD-Corp-Gov-Guide.aspx as required by the NYSE.

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Item 1. Business

INTRODUCTION

Our vision is to enable customer leadership, better and faster than our competition, through the creation, innovation and manufacture of graphite and carbon material science-based solutions. We have 125 years of experience in the research and development of graphite and carbon-based solutions and our intellectual property portfolio is extensive. Our business was founded in 1886 by the National Carbon Company.

We are one of the world s largest manufacturers of the broadest range of high quality graphite electrodes, products essential to the production of electric arc furnace (**EAF**) steel and various other ferrous and nonferrous metals. We also manufacture carbon, graphite and semi-graphite refractory products, which protect the walls of blast furnaces and submerged arc furnaces. We are one of the largest manufacturers of high quality natural graphite products enabling thermal management solutions for the electronics industry and fuel cell solutions for the transportation and power generation industries. We are one of the world s largest manufacturers and providers of advanced graphite and carbon materials for the transportation, solar, and oil and gas exploration industries. We service customers in about 65 countries, including industry leaders such as Arcelor Mittal, BaoSteel, Gerdau S.A. and ThyssenKrupp Steel in steel, Samsung in electronics, Elkem Solar in the solar industry and Griffin Wheel in the transportation industry.

On November 30, 2010, we announced the acquisition from the equity holders of Seadrift Coke L.P. (Seadrift) of 81.1% of the equity interests of Seadrift that we did not already own and from the equity holders of C/G Electrodes LLC (C/G) of 100% of the equity interests of C/G.

Seadrift is one of the largest producers of petroleum-based needle coke in the world and owns the world s only known stand-alone petroleum-based needle coke plant. Needle coke is the key raw material used to make graphite electrodes, including premium UHP graphite electrodes, which are critical consumables in EAF steel production. The acquisition of Seadrift helps to assure us of a stable supply for a majority of the primary raw material in the production of graphite electrodes and should allow us to reduce the relative cost of a significant portion of our supply of needle coke.

C/G is a U.S.-based producer of large diameter premium UHP graphite electrodes used in the EAF steel making process. C/G also sells various other graphite-related products, including specialty graphite blocks, granular graphite and partially processed electrodes. The acquisition of C/G provides us with a large diameter graphite electrode manufacturing facility in the U.S. which will allow us to respond to customer orders more quickly and reduce freight cost and transit time for North American shipments.

We currently manufacture our products in 14 manufacturing facilities strategically located on four continents. We believe our Industrial Materials network has the largest manufacturing capacity and the lowest manufacturing cost structures of all of our major competitors and delivers the highest-level quality products. We currently have the operating capability, depending on product mix, to manufacture approximately 255,000 metric tons of graphite electrodes sellable capacity. We believe that our global manufacturing network provides us with competitive advantages in product quality, proximity to customers, timely and reliable product delivery, and product costs. Given our global network, we are well positioned to serve the growing number of consolidated, global, multi-plant steel customers as well as certain smaller, regional customers and segments.

We operate one of the premier research, development and testing facilities in the graphite and carbon industry, and we believe we are an industry leader in graphite and carbon material science and high temperature processing know-how. We believe our technological capabilities for developing products with superior thermal, electrical and physical characteristics provide us with a competitive advantage. These capabilities have enabled us to accelerate development and commercialization of our technologies to exploit markets with high growth potential.

Products. We have five major product categories: graphite electrodes, refractory products, needle coke products, advanced graphite materials and natural graphite products.

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Reportable Segments. Our businesses are reported in the following reportable segments: Industrial Materials, which include graphite electrodes, refractory products and needle coke products; and Engineered Solutions, which include advanced graphite materials and natural graphite products. We discuss our reportable segments and geographic areas in more detail in Note 3, Segment Reporting of the Notes to the Consolidated Financial Statements.

Industrial Materials. Our Industrial Materials segment manufactures and delivers high quality graphite electrodes, refractory products and needle coke products.

We are one of the world s largest manufacturers of the broadest range of high quality graphite electrodes, refractory products, and needle coke products. Electrodes are key components of the conductive power systems used to produce steel and other non-ferrous metals. Approximately 70% of our graphite electrodes sold is consumed in the EAF steel melting process, the steel making technology used by all mini-mills, typically at a rate of one graphite electrode every eight to ten operating hours. We believe that mini-mills constitute the higher long-term growth sector of the steel industry and that there is currently no commercially viable substitute for graphite electrodes in EAF steel making. Therefore, graphite electrodes are essential to EAF steel production. The remaining approximately 30% of our graphite electrodes sold is primarily used in various other ferrous and non-ferrous melting applications, including steel refining (that is, ladle furnace operations for both EAF and basic oxygen furnace steel production), fused materials, chemical processing, and alloy metals. We are a producer of petroleum needle coke. Needle coke is a key raw material in the manufacture of the graphite electrodes used in the EAF steel production process.

GrafTech is also a leading global supplier of carbon, semigraphite and graphite refractory hearth linings for blast and submerged arc furnaces used to produce iron and ferroalloys. Refractory products are used to protect the walls of blast furnaces and submerged arc furnaces due to their high thermal conductivity and the ease with which they can be machined to large or complex shapes. Among the major refractory product suppliers, GrafTech has one of the most complete offerings, including a full range of brick, block, ramming paste, cement and grout products.

Engineered Solutions. Engineered Solutions include advanced graphite materials and natural graphite products. Advanced graphite materials are highly engineered synthetic graphite products used in many industrial areas due to their unique properties and the ability to tailor them to specific solutions. These products are used in the transportation, solar, metallurgical, chemical, oil and gas exploration, and various other industries as further described below. Our natural graphite products consist of thermal management solutions, fuel cell components, and sealing materials.

INDUSTRIAL MATERIALS SEGMENT

Our Industrial Materials segment, which had net sales of $1,008.8 million in 2008, $538.1 million in 2009, and $833.9 million in 2010, manufactures and delivers high quality graphite electrodes, refractory products and needle coke products, as well as provides customer technical services. Industrial Materials sales represented approximately 85%, 82% and 83% of consolidated net sales for 2008, 2009, and 2010, respectively. We estimate that the worldwide demand for our industrial materials products was approximately $3.8 billion in 2009 (excluding needle coke products) and approximately $6.6 billion in 2010 (including needle coke products). On a comparable basis, the total worldwide demand change for Industrial Materials is an increase of 32% primarily due to improving global economic conditions. Customers for these products are located in all major geographic regions.

Graphite Electrode Products. Graphite electrodes are consumed primarily in EAF steel production, the steel making technology used by all mini-mills. Graphite electrodes are also consumed in the refining of steel in ladle furnaces and in other smelting processes such as production of titanium dioxide.

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. The electrodes are consumed in the course of that production.

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Electric arc furnaces operate using either alternating electric current or direct electric current. The vast majority of electric arc furnaces use alternating current. Each of these alternating current furnaces typically uses nine electrodes (in three columns of three electrodes each) at one time. The other electric arc furnaces, which use direct current, typically use one column of three electrodes. The size of the electrodes varies depending on the size of the furnace, the size of the furnace s electric transformer and the planned productivity of the furnace. In a typical furnace using alternating current and operating at a typical number of production cycles per day, one of the nine electrodes is fully consumed (requiring the addition of a new electrode), on average, every eight to ten operating hours. The actual rate of consumption and addition of electrodes for a particular furnace depends primarily on the efficiency and productivity of the furnace. Therefore, demand for graphite electrodes is directly related to the amount and efficiency of electric arc furnace steel production.

Electric arc furnace steel production requires significant heat (as high as 5,000° F) to melt the raw materials in the furnace, primarily scrap metal. Heat is generated as electricity (as much as 150,000 amps) passes through the electrodes and creates an electric arc between the electrodes and the raw materials.

Graphite electrodes are currently the only known commercially available products that have the high levels of electrical conductivity and the capability of sustaining the high levels of heat generated in an electric arc furnace producing steel. Therefore, graphite electrodes are essential to the production of steel in electric arc furnaces. We believe there is currently no commercially viable substitute for graphite electrodes in electric arc furnace steel making. We estimate that, on average, the cost of graphite electrodes represents about 2 3% of the cost of producing steel in a typical electric arc furnace.

Electric arc furnace steel production was estimated to be approximately 390 million metric tons in 2010, representing approximately 28% of the world s steel production. As global economic conditions continue to improve, we expect EAF production to increase approximately 6% in 2011. We are aware of approximately 43 million metric tons of new EAF capacity start ups and projects that we expect will be added over the next two-three years. We believe the EAF utilization rate in 2010 was approximately 71%, compared to approximately 65% in 2009.

Relationship Between Graphite Electrode Demand and EAF Steel Production. The improved efficiency of electric arc furnaces has resulted in a decrease in the average rate of consumption of graphite electrodes per metric ton of steel produced in electric arc furnaces (called specific consumption). We estimate that the average EAF melter specific consumption has declined in the last five years by an average of approximately 1.8% per year from slightly above 1.8 kilograms of graphite electrodes per metric ton produced in 2006 and we estimate that the rate of improvement in specific consumption will decline to less than one percent per year over the long term.

Over the long term, specific consumption will continue to decrease at a more gradual pace, as the EAF steel makers investment cost (relative to the benefits) increases to achieve further efficiencies in specific consumption. Another contributing factor is the ongoing electrode quality improvements of graphite electrode manufacturers.

We further believe that the rate of decline in the future will be impacted by the addition of modern EAF steel making capacity which tends to have lower specific consumption than the average. To the extent that this new capacity replaces old capacity, it has the accelerated effect of reducing industry wide specific consumption due to the efficiency of new electric arc furnaces relative to the old. However, to the extent that this new capacity increases industry wide EAF steel production capacity and that capacity is utilized, it creates additional demand for graphite electrodes. As an example, the approximately 43 million metric tons of new EAF capacity start ups and projects that we expect will be added over the next 2-3 years will result in approximately 74,000 metric tons of new graphite electrode demand, depending on steel industry utilization rates.

Increases in EAF steel production, offset by declines in specific consumption, resulted in corresponding changes in demand for graphite electrodes. Graphite electrode demand is expected to increase in 2011 due to production increases in the EAF

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steel industry, which are forecasted to increase over 5%. We estimate that graphite electrode demand will also grow at over 5% (net of specific consumption).

Over the long term, graphite electrode demand is estimated to grow at an average annual net growth rate of approximately 2%, based on the anticipated growth of EAF steel production (average historical growth rate of 3%), partially offset by the decline in future specific consumption.

Production Capacity. We believe that the worldwide total graphite electrode manufacturing capacity was approximately 1.6 million metric tons for 2008 and 2009 and approximately 1.7 million metric tons for 2010. We believe that the graphite electrode industry manufacturing capacity utilization rate worldwide was less than 90% for 2008, approximately 60% for 2009, and approximately 80% for 2010.

As a result of the recent acquisition and other actions, as well as our proprietary process and technological improvements, we have the capability, depending on product demand and mix, to manufacture approximately 255,000 metric tons of graphite electrodes annually from our existing assets.

Industrial Materials Demand. We estimate that the worldwide demand for graphite electrodes, needle coke, refractories and other products was approximately $6.6 billion in 2010 and we estimate that we supplied approximately 14% of the worldwide demand for these products.

Refractory Products. We manufacture carbon, semi-graphitic, and graphite refractory bricks which are used primarily for their high thermal conductivity. Common applications in blast furnace and submerged arc furnaces include cooling courses in the hearth bottoms for heat distribution and removal, backup linings in hearth walls for improved heat transfer and safety, and lintels over copper cooling plates where a single brick cannot span the cooling plate.

GrafTech has one of the most unique carbon making processes in the world, called the hot-press process. By using various carbon and other sources and utilizing electricity, a baked refractory brick can be created in minutes as opposed to a month for the traditional block process. After cooling, the bricks are sent to an automated grinder and machined to the required size and shape to fill a customer s order.

Needle Coke Products. We are currently producing petroleum needle coke. Needle coke is the key raw material in the manufacture of graphite electrodes which are consumed in EAF steel production. Petroleum needle coke, a crystalline form of carbon derived from decant oil is used primarily in the production of graphite electrodes. Graphite electrode producers combine petroleum or pitch needle coke with pitch adhesives and other ingredients to form graphite electrodes.

Petroleum and pitch needle coke, relative to other varieties of coke, is distinguished by its needle-like structure and its quality, which is measured by the presence of impurities, principally sulfur, nitrogen and ash. The needle-like structure of petroleum and pitch needle coke encourages expansion along the length of the electrode, rather than the width, which reduces the likelihood of fractures. Impurities reduce quality because they increase the coefficient of thermal expansion and electrical resistivity of the graphite electrode, which can lead to uneven expansion and a build-up of heat and cause the graphite electrode to oxidize rapidly and break. Petroleum and pitch needle coke is typically low in these impurities. In order to minimize fractures caused by disproportionate expansion over the width of an electrode, and minimize the effect of impurities, large-diameter graphite electrodes (18 inches to 32 inches) employed in high-intensity electric arc furnace applications are comprised almost exclusively of petroleum and pitch needle coke.

ENGINEERED SOLUTIONS SEGMENT

Demand for products in our engineered solutions segment recovered to near 2008 levels during 2010 as the global economy recovery process progressed. The electronic thermal management demand continued to grow and the business also benefited from increased activity in solar and other energy products.

Our Engineered Solutions segment had sales of $181.5 million in 2008, $120.9 million in 2009, and $173.1 million in 2010. Engineered Solutions represented approximately 15% of consolidated net sales for 2008, approximately 18% for 2009 and approximately 17% for

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2010. We estimate that our addressable worldwide demand for engineered solutions was $1,027 million in 2008, $716 million in 2009, and $1,100 million in 2010.

Advanced Graphite Materials. Our advanced graphite materials include products in a variety of shapes and grades, weighing up to ten metric tons, for diverse applications. Our products are used in many applications including fused refractory products and semiconductor components. In addition, certain of our materials, when combined with advanced flexible graphite, provide superior heat management solutions for insulation packages, induction furnaces, high temperature vacuum furnaces and direct solidification furnaces and other industrial thermal management applications.

Natural Graphite Products. We manufacture natural graphite products, consisting of flexible graphite. Applications include thermal management solutions used for the electronics, automotive, petrochemical, and transportation industries. We are one of the world s largest manufacturers of natural graphite products for these uses and applications.

BUSINESS STRATEGIES

We believe that, by growing our revenues and operating income, successfully implementing LEAN initiatives, and maximizing our cash flows, we will deliver enhanced financial performance and return on shareholder value, and also position us to capitalize on growth opportunities that may arise. We have transformed our operations, building competitive advantages to enable us to compete successfully in our major product lines, to realize enhanced performance as economic conditions improve and to exploit growth opportunities from our intellectual property portfolio. Our business strategies are designed to expand upon our competitive advantages by:

Leveraging Our Unique Global Manufacturing Network. We believe that our global manufacturing network provides us with competitive advantages in product quality, product costs, timely and reliable delivery, and operational flexibility to adjust product mix to meet the diverse needs of a wide range of segments and customers.

We continue to leverage our network to seek to achieve significant increases in throughput generated from our existing assets, through productivity improvements, capital expenditures, and other efficiency initiatives. We believe we can further exploit our network by focusing our technical and customer service capabilities on:

- the increasing number of large global customers created by the consolidation trend within the steel industry, to whom we believe we are well positioned to offer products that meet their volume, product quality, product mix, delivery reliability and service needs at competitive prices; and

- customers in targeted segments where we have competitive advantages to meet identified customer needs due to the range and quality of our products, the utilization of our capacity, the value of our customer technical service and our low cost supplier advantage.

We sell our products in every major geographic region. Sales of our products to buyers outside the U.S. accounted for about 83% of net sales in 2008, 82% of net sales in 2009, and about 80% of net sales in 2010. No single customer or group of affiliated customers accounted for more than 10% of our total net sales in 2008, 2009 or 2010.

Driving Continuous Improvement with LEAN and Six Sigma. We believe a consistent focus on our customers and diligence towards aligning our processes to satisfy these customers is essential in today s global market. We have undertaken a comprehensive launch of LEAN and Six Sigma with dedicated resources at all of our key manufacturing plants intended to create a common language and tool set centering around LEAN and Six Sigma.

Our focus on waste reduction using a team approach creates knowledge at all levels of the organization. Concentrating on creating flow within processes enables us to capitalize on lower inventories while still maintaining high on-time-delivery. Our metric driven behavior and instituting solid corrective actions to anomalies drives us towards customer centric solutions.

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We believe we will be able to continue to leverage our stream-lined processes as a sustainable competitive advantage with shorter lead times, lower costs, higher quality products, and exceptional service. We are applying these methodologies and tools to not only our manufacturing processes; but also to our transactional and business processes such as Accounts Receivable, New Product Introduction, and Cash Forecasting in order to develop a high-performing value stream.

Accelerating Commercialization of Advantaged Technologies. We believe that our technological capabilities for developing products with superior thermal, electrical and physical characteristics provide us with a potential growth opportunity as well as a competitive advantage. We seek to exploit these capabilities and our intellectual property portfolio to accelerate development and commercialization of these technologies across all of our businesses, to improve existing products, and to develop and commercialize new products for higher growth rate areas such as electronic thermal management technologies. We received *R&D Magazine s* prestigious R&D 100 Award in six of the past eight years. The R&D 100 Award honors the 100 most technologically significant products introduced into the marketplace each year. We received this award in 2003 and 2004 for our achievements in electronic thermal management products, in 2005 for our large-diameter pinless graphite electrodes, in 2006 for GRAFOAM® carbon foam, a unique high strength, light weight carbon foam, in 2007 for GrafCell® flow field plates, a key component to the commercialization of fuel cells, and in 2009 for our GRAFIHX Flexible Heat Exchangers, a graphite solution uniquely suited for radiant floor heating systems.

Delivering Exceptional and Consistent Quality. We believe that our products are among the highest quality products available in our industry. We have been recognized as a preferred or certified supplier by many major steel companies and have received numerous technological innovation and other awards by industry groups, customers and others. Using our technological capabilities, we continually seek to improve the consistent overall quality of our products and services, including the performance characteristics of each product, the uniformity of the same product manufactured at different facilities and the expansion of the range of our products. We believe that improvements in overall quality create significant efficiencies and opportunities for us, provide us the opportunity to increase sales volumes and potential demand share, and create production efficiencies for our customers.

Providing Superior Technical Service. We believe that we are recognized as one of the industry leaders in providing value added technical services to customers for our major product lines. We believe that we have one of the largest customer technical service and related supporting engineering and scientific organizations in our industry, with more than 200 engineers, scientists and specialists around the world. A portion of these employees assist key steel and other metals customers in furnace applications, operations and upgrades to reduce energy consumption, improve raw material costs and increase output.

Maintaining Liquidity and Building Stockholder Value. We believe that our business strategies support our goal of growing revenues and operating income and maximizing the cash generated from operations. Maintaining liquidity remains a priority for us. At December 31, 2010, we had outstanding borrowings under our Revolving Facility of $130.0 million, $143.4 million outstanding related to Senior Subordinated Notes, and cash and cash equivalents of $13.1 million. We had no borrowings under our Revolving Facility at December 31, 2009 and our cash and cash equivalents exceeded $50 million.

We continually review our assets, product lines and businesses to seek out opportunities to maximize value, through re-deployment, merger, acquisition, divestiture or other means, which could include taking on more debt or issuing more equity. We may at any time buy or sell assets, product lines or businesses.

PRODUCTION PLANNING

We plan and source production of our products globally. We have evaluated virtually every aspect of our global supply chain, and we have redesigned and implemented changes to our global manufacturing, marketing and sales processes to leverage the strengths of our repositioned manufacturing network. Among other

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things, we have reduced manufacturing bottlenecks, improved product and service quality and delivery reliability, expanded our range of products, and improved our global sourcing for our customers.

We deploy synchronous work processes at most of our manufacturing facilities. We have also installed and continue to install and upgrade proprietary process technologies at our manufacturing facilities, use statistical process controls in our manufacturing processes for all products, and employ LEAN processing improvement techniques.

Our global manufacturing network also helps us to minimize risks associated with dependence on any single economic region.

MANUFACTURING

Graphite Electrode. The manufacture of a graphite electrode takes, on average, about two months. We manufacture graphite electrodes ranging in size up to 30 inches in diameter and over 11 feet in length, and weighing as much as 5,900 pounds (2.6 metric tons). The manufacture of graphite electrodes includes six main processes: forming the electrode, baking the electrode, impregnating the electrode with a special pitch that improves the strength, rebaking the electrode, graphitizing the electrode using electric resistance furnaces, and machining.

We generally warrant to our customers that our electrodes will meet our specifications. Electrode returns and replacements have been immaterial in the aggregate to net sales in each of the last three years.

We manufacture graphite electrodes in the United States, Mexico, Brazil, South Africa, France and Spain. We have an electrode machining center in Russia.

Refractory Products. Refractory bricks are manufactured in the United States, using a proprietary hot press process. We have two primary grades of refractory products. The manufacture of a refractory block begins with the mixing and blending of the raw materials. The raw materials are fed into molds and pressed into shape. Intense heat and pressure are then applied. The bricks are then cooled and then cut into the desired shapes. Our bricks are generally smaller than our competitors products. We believe our smaller brick size creates an easier installation process compared to larger bricks. We manufacture refractory bricks into sizes up to 18 inches, although we can manufacture bricks into a multitude of sizes and shapes to meet the needs of our customers.

Petroleum Needle and Pitch Coke Products. Petroleum needle coke is produced through a manufacturing process very similar to a refinery. The production process converts decant oil into petroleum needle coke shaped in a needle-like structure. Pitch coke is produced using coal-tar pitch. We produce petroleum needle coke at one manufacturing facility in the U.S.

Advanced Graphite Materials. Advanced graphite materials are manufactured using processes and technologies similar to those of graphite electrodes. Manufacturing lead times range between four to six months for most products and depend on the specific material properties that are needed to be imparted in the final billet. After the forming, baking, impregnation, rebaking and graphitization steps, the billets are either dressed and sold as raw stock or are machined into custom parts against proprietary specifications supplied by our customers. We produce advanced graphite materials in the United States, South Africa, Brazil, France and Italy.

Natural Graphite Products. We use a proprietary process to convert mined natural graphite flake into expandable graphite, an intermediate product. We manufacture flexible graphite by subjecting expandable graphite to additional proprietary processing. Our natural graphite business operates two manufacturing facilities in the U.S. We believe that we operate one of the world s most technologically sophisticated advanced natural graphite production lines.

Quality Standards and Maintenance. Most of our global manufacturing facilities are certified and registered to ISO 9001-2008 international quality standards and some are certified to QS 9001-2008. Natural graphite has a quality assurance system designed to meet the most stringent requirements of its customers and is ISO TS 16949:2009 certified. Maintenance at our facilities is conducted on an ongoing basis.

Raw Materials and Suppliers. The primary raw materials for electrodes are engineered by-products and

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residues of the petroleum and coal industries. We use these raw materials because of their high carbon content. The primary raw materials for graphite electrodes are calcined needle coke and pitch. We purchase raw materials from a variety of sources and believe that the quality and cost of our raw materials on the whole is competitive with those available to our competitors.

We were parties to long-term contracts with ConocoPhillips for the supply of petroleum coke, our primary raw material. These supply agreements contained customary terms and conditions including annual price negotiations, dispute resolution and termination provisions, including, upon a termination, a three-year supply arrangement with reducing volume commitments. During 2010, these termination provisions were exercised, and the contracts were formally terminated as of December 31, 2010. In accordance with the termination provisions, we have negotiated three-year supply arrangements with ConocoPhillips, for quantities of needle coke which we believe are sufficient for our raw material requirements as currently forecast.

We have firm price contracts for the bulk of our 2011 needle coke requirements. We expect to purchase approximately 35% of our 2011 needle coke requirements from Seadrift.

Raw materials for refractory products are primarily sourced internally and from a variety of third parties. The primary raw material used in refractory products is crushed graphite.

The primary raw material used by Seadrift to make petroleum needle coke is decant oil, a by-product of the gasoline refining process. Seadrift is not dependent on any single refinery for decant oil. While Seadrift has purchased a substantial majority of its raw material inventory from two or three suppliers in recent years, we believe that there is an abundant supply of decant oil in the United States available from a variety of sources on similar terms.

We purchase energy from a variety of sources. Electric power used in manufacturing processes is purchased from local suppliers under contracts with pricing based on rate schedules or price indices. Our electric costs can vary significantly depending on these rates and usage. Natural gas used in manufacturing processes is purchased from local suppliers primarily under annual volume contracts with pricing based on various natural gas price indices.

DISTRIBUTION

We deploy various demand management and inventory management techniques to seek to ensure we can meet our customers delivery requirements while still maximizing the utilization of our production capacity. We can experience significant variation in our customers delivery requirements as their specific needs vary and change through the year. We generally seek to maintain appropriate inventory levels, taking into account these factors as well as the significant differences in manufacturing cycle times for graphite electrode products and our customers products.

Finished products are usually stored at our manufacturing facilities. Limited quantities of some finished products are also stored at local warehouses around the world to meet customer needs.

SALES AND CUSTOMER SERVICE

Our product quality, our global manufacturing network and our low cost structure allow us to deliver a broad range of product offerings across various segments. We differentiate and sell the value of our product offerings, depending on the segment or specific product application, primarily based on product quality and performance, delivery reliability, price, and customer technical service.

We price our products based on the value that we believe we deliver to our customers. Pricing may vary within any given industry, depending on the segment within that industry and the value of the offer to a specific customer. We believe that we can achieve increased competitiveness, customer demand, and profitability through our value added offerings to customers. In certain segments where the product is less differentiated, these value added offerings have less impact on our competitiveness. Historically, our graphite electrode customers generally seek to negotiate to secure the reliable supply of their anticipated volume requirements on an annual basis, sometimes called the graphite electrode book building process . These orders are subject to renegotiation or adjustment to meet changing conditions. The remainder of our graphite electrode

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customers purchase their electrodes as needed at then current market prices (i.e., at the spot price).

We believe that we are one of the recognized industry leaders in providing value added technical services to customers for our major product lines, and that we have one of the largest customer technical service and related supporting engineering and scientific organizations in our industry, with more than 200 engineers, scientists and specialists around the world.

We deploy these selling methods and our customer technical service to address the specific needs of all products. Our direct sales force operates from 15 sales offices located around the world.

Industrial Materials. We sell our Industrial Materials segment products primarily through our direct sales force, independent sales representatives and distributors, all of whom are trained and experienced with our products.

We have customer technical service personnel based around the world to assist customers to maximize their production and minimize their costs. We employ about 162 engineers and technicians in our Industrial Materials segment, a portion of whom provide technical service and advice to key steel and other metals customers. These services include furnace applications and operation, as well as furnace upgrades to reduce energy consumption, improve raw material costs and increase output.

Engineered Solutions. Our Engineered Solutions products are sold using direct employees and independent sales representatives and distributors in all major geographic regions of the world including North and South America, Africa, Europe and Asia.

The majority of our products are custom built to customer specifications after an iterative review process between the customer s engineers and our sales and technical service employees. Our sales personnel are trained and experienced with the products they sell. We provide technical service to our customers through dedicated technical service engineers who operate out of our North American and European facilities. We believe that our technical service differentiates us from our competition and take pride in our ability to support the technical requirements of our customers.

TECHNO LOGY

We believe that we are an industry leader in graphite and carbon materials science and high temperature processing know-how and that we operate premier research, development and testing facilities for our industry. We have 125 years of experience in the research and development of graphite and carbon technologies. Over the past several years, we have analyzed our intellectual property portfolio to identify new product opportunities with high growth potential for us, redirected research to enhance and exploit our portfolio and accelerated development of such products.

Research and Development. We conduct our research and development both independently and in conjunction with our strategic suppliers, customers and others. We have a dedicated technology center located at our corporate headquarters in Ohio, which focuses on all products. We also have a pilot plant that has the capability to produce small or trial quantities of new or improved graphite products, to accelerate scale-up and market entry. In addition, we have a state-of-the-art testing facility located at our headquarters capable of conducting physical and analytical testing for those products. The activities at these centers and facilities are integrated with the efforts of our engineers at our manufacturing facilities who are focused on improving manufacturing processes.

Research and development expenses amounted to $9.0 million, $10.2 million and $12.3 million in 2008, 2009 and 2010, respectively.

We believe that our technological and manufacturing strengths and capabilities provide us with a significant growth opportunity as well as a competitive advantage and are important factors in the selection of us by industry leaders and others as a strategic partner. Our technological capabilities include developing products with superior thermal, electrical and physical characteristics that provide a differentiating advantage. We seek to exploit these strengths and capabilities across all of our businesses, to improve existing products and to develop and commercialize new products with high growth potential.

A significant portion of our research and development is focused on new product development, particularly engineered solutions for advanced energy

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applications such as solar silicon manufacturing, electronic thermal management, energy storage and generation. Other significant work focuses on advancements in electrode technology and raw material optimization.

Intellectual Property. We believe that our intellectual property, consisting primarily of patents and proprietary know-how, provides us with competitive advantages and is important to our growth opportunities. Our intellectual property portfolio is extensive, with close to 400 U.S. and foreign patents, as well as close to 400 pending U.S. and foreign carbon and graphite related patent applications, which we believe, is more than any of our major competitors. Among our competitors, we hold one of the largest number of patents for flexible graphite as well as the largest number of patents relating to the use of natural graphite for certain fuel cell applications. In addition, we have obtained exclusive and non-exclusive licenses to various U.S. and foreign patents relating to our technologies. These patents and licenses expire at various times over the next two decades.

We own, and have obtained licenses to, various trade names and trademarks used in our businesses. For example, the trade name and trademark UCAR are owned by Union Carbide Corporation (which has been acquired by Dow Chemical Company) and are licensed to us on a worldwide, exclusive and royalty-free basis until 2025. This particular license automatically renews for successive ten-year periods. It permits non-renewal by Union Carbide in 2025 or at the end of any renewal period upon five years notice of non-renewal.

We rely on patent, trademark, copyright and trade secret laws as well as appropriate agreements to protect our intellectual property. Among other things, we seek to protect our proprietary know-how and information, through the requirement that employees, consultants, strategic partners and others, who have access to such proprietary information and know-how, enter into confidentiality or restricted use agreements.

COMPETITION

Industrial Materials. Competition in the industrial materials segment is intense and is based primarily on product differentiation and quality, delivery reliability, price, and customer service, depending on the segment or specific product application.

In the most demanding product applications (that is, graphite electrodes that can operate in the largest, most productive and demanding EAF steel mills in the world), we compete primarily on product quality, delivery reliability, and customer technical service. We believe these are prerequisite capabilities that not all producers of graphite electrodes possess or can demonstrate consistently. In this segment, we primarily compete with higher quality graphite electrode producers, although this segment of the graphite electrode demand has become increasingly competitive in recent years as graphite electrode producers have improved the quality of their offerings and become qualified suppliers to some of the largest and most sophisticated EAF customers.

In other product applications, including ladle furnaces requiring less demanding performance and certain other ferrous and non-ferrous segments, we compete based on product differentiation and product quality. Our product quality, unique global manufacturing network, proximity to regional and local customers and the related lower cost structure allows us to deliver a broad range of product offerings across these various segments.

We believe that there are no current commercially viable substitutes for graphite electrodes in EAF steel production.

Our refractory products business competes based on product quality, useful life, and technology. We believe our proprietary hot press process and the smaller shape of our refractory bricks provides a more diverse product that is easier to install than larger refractory bricks.

We believe that there are certain cost and technology barriers to entry into our industry, including the need for extensive product and process know-how and other intellectual property and a high initial capital investment. It also requires high quality raw material sources and a developed energy supply infrastructure. However, competing manufacturers, particularly Chinese manufacturers, have been able to expand their sales and manufacturing geographically.

There are a number of international graphite electrode producers, including SGL Carbon SE (Germany), Tokai Carbon Co., Ltd. (Japan), Showa Denko Carbon K.K. (Japan), Graphite India Limited (India), HEG

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Limited (India), SEC Corporation Limited (Japan), Nippon Carbon Co., Ltd. (Japan), Energoprom Group (Russia), Beijing FangDa Carbon Tech Co. Ltd. (China) and Sinosteel Corporation (China), as well as a number of others which are in China.

All graphite electrode manufacturers, even those without multinational manufacturing operations, are capable of, and many in fact are, supplying their products globally, and are experiencing increased competition from Indian, Russian and Chinese graphite electrode manufacturers. The Chinese government has strongly supported and invested heavily in industrial expansion in recent years and continues to do so. As a part of this expansion, Chinese production of graphite electrodes has increased and the quality of the electrodes produced in China has improved. The Chinese policy of maintaining a fixed rate of exchange of the Renminbi to the U.S. dollar may provide Chinese producers with a competitive advantage with respect to exports of graphite electrodes.

We believe there are currently approximately ten other firms producing UHP-grade needle coke. These competitors include ConocoPhillips, Petrocokes Japan Limited (Japan), Mitsubishi Chemical Company, Baosteel Group (China), C-Chem Co., Ltd. (Japan), Indian Oil Company Limited, Hongtai Chemical Industry (Group) Co., Ltd. (China), JX Holdings Inc. (Japan), Petrochina International Jinzhou Co., Ltd. (China) and Sinosteel Anshan Research Institue of Thermo-Energy Co. Ltd. (China). Competition in the needle coke industry is based primarily on service, price, reliability and efficiency of products. Our Seadrift facility competes primarily on the quality and price of its needle coke.

Engineered Solutions. Competitors of our engineered solutions segment compete on product differentiation and innovation, quality, price, delivery reliability and customer service depending on the specific demands or product applications.

We believe we are the technology leader within the segments we participate in, and we differentiate ourselves based on our ability to provide customers with a solution that gives them one of the lowest total operational costs in meeting their product manufacturing needs. We achieve this by using our extensive product, process and application knowledge.

We believe there are certain barriers to entry into this industry, including the need for extensive product and process know-how, intellectual property and a high initial capital investment.

We compete with other major specialty graphite competitors who manufacture and sell on a global basis. These competitors include SGL Carbon A.G. (Germany), Tokai Carbon Co., Ltd. (Japan), Toyo Tanso Co., Ltd.(Japan), Mersen S.A. (France) and several other competitors, a number of which are in China.

ENVIRONMENTAL MATTERS

We are subject to a wide variety of federal, state, local and foreign laws and regulations relating to the presence, storage, handling, generation, treatment, emission, release, discharge and disposal of wastes and other substances defined as hazardous or toxic, or otherwise believed to have potential to harm the environment or human health, which govern our current and former properties, neighboring properties and our current operations worldwide. These laws and regulations (and the enforcement thereof) are periodically changed and are becoming increasingly stringent. We have experienced some level of regulatory scrutiny at most of our current and former facilities, and have been required to take corrective or remedial actions and incur related costs in the past, and may experience further regulatory scrutiny, and may be required to take further corrective or remedial actions and incur additional costs in the future. Although it has not been the case in the past, these costs could have a material adverse effect on us in the future.

The principal U.S. laws and regulations to which we are subject include:

- the Clean Air Act, the Clean Water Act and the Resource Conservation and Recovery Act and similar state and local laws which regulate air emissions, water discharges and hazardous waste generation, treatment, storage, handling, transportation and disposal;

- the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, and the Small Business Liability Relief and Brownfields

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Revitalization Act of 2002, and similar state laws that provide for the reporting of, responses to and liability for releases of hazardous substances into the environment; and

the Toxic Substances Control Act and related laws that are designed to track and control chemicals that are produced or imported into the United States and assess the risk to health and to the environment of new products at early developmental stages.

Further, laws adopted or proposed in various states impose or may impose, as the case may be, reporting or remediation requirements if operations cease or property is transferred or sold.

We believe that we are currently in material compliance with the federal, state, local and foreign environmental laws and regulations to which we are subject. We have received and may in the future receive notices from the U.S. Environmental Protection Agency (U.S. EPA) or state environmental protection agencies, as well as claims from other parties, alleging that we are a potentially responsible party (PRP) under Superfund and similar state laws for past and future remediation costs at waste disposal sites and other contaminated properties. Although Superfund liability is joint and several, in general, final allocation of responsibility at sites where there are multiple PRPs is made based on each PRP s relative contribution of hazardous substances to the site. Based on information currently available to us, we believe that any potential liability we may have as a PRP will not have a material adverse effect on us.

As a result of amendments to the Clean Air Act enacted in 1990, certain of our facilities have been or will be required to comply with new reporting requirements and standards for air emissions that have been or may be adopted by the U.S. EPA and state environmental protection agencies over the next several years pursuant to regulations that have been or could be promulgated, including potentially the promulgation of maximum achievable control technology standards for the carbon and graphite manufacturing industry. The regulations that have been promulgated to date have necessitated use of additional administrative and engineered controls, and changes in certain manufacturing processes, in order for us to achieve compliance with these regulations. Similar foreign laws and regulations have been or may also be adopted to establish new standards for air emissions, which may also require additional controls on our manufacturing operations outside the U.S. Based on information currently available to us, we believe that compliance with these regulations will not have a material adverse effect on us.

Our manufacturing operations outside the U.S. are also subject to the laws and regulations of the countries in which those operations are conducted. These laws and regulations primarily relate to pollution prevention and the control of the impacts of industrial activities on the quality of the air, water and soil. Regulated activities include, among other things: use of hazardous substances; packaging, labeling and transportation of products; management and disposal of toxic wastes; discharge of industrial and sanitary wastewater; and process emissions to the air. Under the European Union s (EU) regulations concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (commonly referred to as REACH), enacted in 2007, manufacturers and importers into the EU of certain chemical substances are required to register and evaluate their potential impacts on human health and the environment. Under REACH, the continued importation into the EU, manufacture and/or use of certain chemical substances may be restricted, and manufacturers and importers of certain chemicals will be required to undertake evaluations of those substances. The requirements of REACH are being phased in over a period of years, and compliance is requiring and will continue to require expenditures and resource commitments. Based on information currently available to us, we believe that compliance with these regulations will not have a material adverse effect on us.

International accords, foreign laws and regulations, and U.S. federal, state and local laws and regulations are increasingly being enacted to address concerns about the effects that carbon dioxide emissions and other identified greenhouse gases (GHG) may have on the environment and climate worldwide. These effects are widely referred to as Climate Change. Some members of the international community have taken actions in the past to address Climate Change issues on a

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global basis. The Kyoto Protocol, which was ratified in 1997, set binding GHG emission reduction targets for the participating industrialized countries. Members of the international community have been meeting since 2007 in the interest of negotiating a future treaty to replace the Kyoto Protocol, which will expire in 2012. Although the U.S. did not ratify the Kyoto Protocol, it is possible that the U.S. would sign a new international Climate Change treaty. The EU Emissions Trading Scheme (EU ETS), enacted under the provisions of the Kyoto Protocol, requires certain listed energy-intensive industries to participate in an international cap and trade system of GHG emission allowances. As carbon and graphite manufacturing is not a covered industry under the current EU ETS, our European operations are not required to comply with these provisions. However, the EU ETS will also expire in 2012 and will likely be replaced by similar legislation that could cover some or all of our manufacturing operations in Europe. Should that happen, our European operations could incur additional expenses to purchase emission allowances in the open trading market.

In the U.S., similar Climate Change legislation has also been proposed in Congress but has not been enacted. Such legislation could be passed in the future and could limit GHG emissions from covered entities through a similar cap and trade system to reduce the quantity of national GHG emissions in accordance with established goals and deadlines. One or more of our U.S. facilities could be covered by such new legislation and the company could be required to purchase emission allowances, depending on the final promulgated GHG emission thresholds, availability of government-granted free emission allowances to energy-intensive or trade vulnerable industries, and other unknown variables.

On October 30, 2009, a Final Mandatory Reporting of Greenhouse Gases Rule was issued in the U.S., which as of the January 1, 2010 effective date, requires facilities with specified GHG sources that emit over the annual threshold quantities to monitor and report their GHG emissions. Corporations that are large suppliers of petroleum products (including, by definition, importers and exporters) must also submit an annual activity report to the U.S. EPA. Some of our operations are covered under this Rule, and we believe that we have the necessary administrative systems in place to comply with the requirements. Under various other foreign and U.S. state regulations, we are currently required to report certain GHG emissions to the pertinent authorities. Furthermore, in December 2009, the U.S. EPA issued an endangerment and cause or contribute finding for GHG, under Section 202(a) of the Clean Air Act, allowing it to issue new rules that directly regulate GHG emissions under the existing federal New Source Review, Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs. On May 13, 2010, the U.S. EPA set GHG emissions thresholds to define when permits under these programs are required for new and existing industrial facilities. Under these programs, new or significantly modified facilities must also use best available control technologies to minimize GHG emissions. Therefore, our U.S. facilities may be required in the future to modify our air permits, implement additional administrative and engineered controls, invest in capital improvements, and/or make changes in certain manufacturing processes in order for us to achieve compliance with these regulations or to expand our operations. Based on information currently available to us, we believe that compliance with these regulations will not have a material adverse effect on us.

We have sold or closed a number of facilities that had operated solid waste landfills on-site. In most cases where we divested the properties, we have retained ownership of the landfills. When our landfills were or are to be sold, we obtained or seek to obtain financial assurance we believe to be adequate to protect us from any potential future liability associated with these landfills. When we have closed landfills, we believe that we have done so in material compliance with applicable laws and regulations. We continue to monitor these landfills pursuant to applicable laws and regulations. To date, the costs associated with the landfills have not been, and we do not anticipate that future costs will be, material to us.

Estimates of future costs for compliance with U.S. and foreign environmental protection laws and regulations, and for environmental liabilities, are necessarily imprecise due to numerous uncertainties, including the impact of potential new laws and regulations, the availability and application of new and diverse technologies, the extent of insurance coverage, the discovery of contaminated properties, or the identification of new hazardous substance disposal sites

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at which we may be a PRP and, in the case of sites subject to Superfund and similar state and foreign laws, the final determination of remedial requirements and the ultimate allocation of costs among the PRPs. Subject to the inherent imprecision in estimating such future costs, but taking into consideration our experience to date regarding environmental matters of a similar nature and facts currently known, we estimate that our costs and capital expenditures (in each case, before adjustment for inflation) for environmental protection regulatory compliance programs and for remedial response actions will not increase materially over the next several years.

Furthermore, we establish accruals for environmental liabilities when it is probable that a liability has been or will be incurred, and the amount of the liability can be reasonably estimated. We adjust these accruals as new remedial actions or other commitments are made, and when new information becomes available that changes the estimates previously made.

INSURANCE

We maintain insurance against civil liabilities relating to personal injuries to third parties, for loss of or damage to property, for business interruptions and for environmental matters, that provides coverage, subject to the applicable coverage limits, deductibles and retentions, and exclusions, that we believe are appropriate upon terms and conditions and for premiums that we consider fair and reasonable in the circumstances. We cannot assure you, however, that we will not incur losses beyond the limits of or outside the coverage of our insurance.

EMPLOYEES

At December 31, 2010, we had 2,915 employees (excluding contractors), an increase of 768 employees compared to 2009. Of this 768 employee increase, 296 were related to the Seadrift and C/G acquisitions. A total of 555 employees were in Europe (including Russia), 866 were in Mexico and Brazil, 429 were in South Africa, 1 was in Canada, 1,054 were in the U.S. and 10 were in the Asia Pacific region. At December 31, 2010, 1,602 of our employees were hourly employees.

At December 31, 2010, approximately 53% of our worldwide employees were covered by collective bargaining or similar agreements, which expire at various times in each of the next several years. At December 31, 2010, about 1,287 employees, or 44% of our employees, were covered by agreements which expire, or are subject to renegotiation, at various times through December 31, 2011. We believe that, in general, our relationships with our unions are satisfactory and that we will be able to renew or extend our collective bargaining or similar agreements on reasonable terms as they expire. We cannot assure, however, that renewed or extended agreements will be reached without a work stoppage or strike or will be reached on terms satisfactory to us.

We have not had any material work stoppages or strikes during the past decade.

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Item 1A. Risk Factors

An investment in our securities involves a high degree of risk. The risks described below are not the only ones facing us. Additional risks not presently known to us, or that we currently deem immaterial, may also have a material adverse effect on us. If any of the following risks actually occur, our financial condition, results of operations, cash flows or business could be harmed. In that case, the market price of our securities could decline, and you could lose part or all of your investment.

RISKS RELATING TO US

A downturn in global economic conditions may materially adversely affect our business.

Our business and results of operations are affected by international, national and regional economic conditions. Financial markets in the United States, Europe and Asia experienced extreme disruption in the second half of 2008 and much of 2009, including, among other things, extreme volatility in security prices, severely diminished liquidity and credit availability, ratings downgrades of certain investments and declining values of others. The global economy was in a recession. Slowing, or declining, economic growth in the United States and elsewhere caused our customers to delay or reduce purchases which, in turn, resulted in reductions in sales of our products, longer sales cycles and increased price competition, materially and adversely affecting our financial position and results of operations.

We believe that in the graphite electrode markets in which we compete, the capacity utilization rate was over 95% in the first nine months of 2008, but, as a result of the financial crisis and the global economic slowdown, fell dramatically in the fourth quarter of 2008 and we estimate they were less than 50% at the end of the year. We believe capacity utilization rates averaged 60% for the full year 2009. These lower capacity utilization rates adversely affected our financial position and results of operation in 2009.

In 2010, the global economy began a gradual recovery from the significant downturn in the second half of 2008 and all of 2009. The International Monetary Fund reported GDP growth figures for 2010 at approximately 3.9%. Based on this recovery, we believe that in the graphite electrode markets in which we compete, the capacity utilization rate was approximately 80%. While improved, these lower than pre-crisis capacity utilization rates continued to adversely affect our financial position and results of operation for 2010.

While stabilization appears to have begun, the global economy remains fragile and market demand remains below pre-crisis levels. The recovery that began in 2010 is expected to continue at a gradual pace in 2011. Economists remain cautiously optimistic regarding 2011, with the recovery remaining sluggish in advanced countries (Belgium, Canada, France, Germany, Italy, Japan, South Korea, Spain, Taiwan, United Kingdom, and United States) and stronger in emerging countries (Brazil, China, India, Mexico, Poland, Russia, South Africa, Turkey, and Ukraine). The twenty countries listed above represent approximately 80% of global GDP. In addition, they represent approximately 85% of global steel demand and 90% of steel production. A key to sustaining world recovery will be the global rebalancing of trade between the advanced and emerging countries. Downside risks remain for 2011, including high unemployment, reduced consumer spending, high deficit spending from governments, turbulent financial markets (in Euro area) and inflation.

We are dependent on the global steel industry and also sell products used in the transportation, semiconductor, solar, petrochemical, electronics, and other industries which are susceptible to global and regional economic downturns.

We sell our industrial materials products, which accounted for about 83% of our total net sales in 2010, primarily to the EAF steel production industry. Many of our other products are sold primarily to the transportation, solar, oil and gas exploration industries. These are global basic industries, and they are experiencing various degrees of contraction, growth and consolidation. Customers in these industries are located in every major geographic region. As a result, our customers are affected by changes in global and regional economic conditions. This, in turn, affects overall demand and prices for our products sold to these industries. As a result of changes in economic conditions, demand and pricing for our products sold to these industries has fluctuated and in some cases declined significantly.

Demand for our products sold to these industries may be adversely affected by improvements in

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our products as well as in the manufacturing operations of customers, which reduce the rate of consumption or use of our products. Our customers, including major steel producers, are experiencing and may continue to experience downturns or financial distress that could adversely impact our ability to collect our accounts receivable or to collect them on a timely basis.

Sales volumes and prices of our products sold to these industries are impacted by the supply/demand balance as well as overall changes in demand, and growth of and consolidation within, the end markets for our products. In addition to the factors mentioned above, the supply/demand balance is affected by factors such as business cycles, rationalization, and increases in capacity and productivity initiatives within our industry and the end markets for our products, some of which factors are affected by decisions by us.

The steel industry, in particular, has historically 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, all of which continue to be affected by the general economic downturn and the deterioration in financial markets, including severely restricted liquidity and credit availability.

In addition, a continuation of the current difficult economic conditions may lead current or potential customers of our Engineered Solutions business to delay or reduce technology purchases or slow their adoption of new technologies. This may result in a continued reduction, or slower rate of recovery, of sales of our Engineered Solutions products and increased price competition, which could materially and adversely affect our financial position and results of operations.

We are subject to restrictive covenants under the Revolving Facility and expect to be subject to restrictive covenants under any renewal or refinancing thereof. These covenants could significantly affect the way in which we conduct our business. Our failure to comply with these covenants could lead to an acceleration of our debt.

The Revolving Facility contains a number of covenants that, among other things, restrict our ability to: sell assets; incur, repay or refinance indebtedness; create liens; make investments or acquisitions; engage in mergers or acquisitions; pay dividends; repurchase stock; or make capital expenditures.

The Revolving Facility also requires us to comply with specified financial covenants, including minimum interest coverage and maximum senior secured leverage ratios. We cannot borrow under the Revolving Facility if the additional borrowings would cause us to breach the financial covenants.

Our ability to continue to comply with applicable covenants may be affected by events beyond our control. The breach of any of the covenants contained in the Revolving Facility, unless waived, would be a default under the Revolving Facility. This would permit the lenders to terminate their commitments to extend credit under, and accelerate the maturity of, the Revolving Facility. The acceleration of our debt could have a material adverse effect on our financial condition and liquidity. If we were unable to repay our debt to the lenders and holders or otherwise obtain a waiver from the lenders and holders, we could be forced to reduce or delay capital expenditures; sell assets or businesses; limit or discontinue, temporarily or permanently, business plans regarding operations; obtain additional debt or equity financing; seek protection under applicable debtor protection statutes, or restructure or refinance debt.

We expect that any renewal or refinancing of the Revolving Facility will contain covenants that may be as restrictive, or more restrictive, than the covenants contained in the Revolving Facility and would extend to the lenders thereunder remedies, in the event of any default, similar to those provided to the lenders under the Revolving Facility described above.

Disruptions in the capital and credit markets, which may continue indefinitely or intensify, could adversely affect our results of operations, cash flows and financial condition, or those of our customers and suppliers.

Disruptions in the capital and credit markets may adversely impact our results of operations, cash flows and financial condition, or those of our customers and suppliers. Disruptions in the capital and credit markets as a result of uncertainty, changing or increased regulation,

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reduced alternatives or failures of significant financial institutions could adversely affect our access to liquidity needed to conduct or expand our businesses or conduct acquisitions or make other discretionary investments, as well as our ability to effectively hedge our currency or interest rate risks and exposures. Such disruptions may also adversely impact the capital needs of our customers and suppliers, which, in turn, could adversely affect our results of operations, cash flows and financial condition.

We are subject to risks associated with operations in multiple countries.

A substantial majority of our net sales are derived from sales outside the U.S., and a substantial majority of our operations and our total property, plant and equipment and other long-lived assets are located outside the U.S. As a result, we are subject to risks associated with operating in multiple countries, including:

- currency devaluations and fluctuations in currency exchange rates, including impacts of transactions in various currencies, impact on 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 costs of our foreign subsidiaries 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 increase 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 increase in revenue, income or earnings taxes and withholding and other taxes on remittances and other payments by subsidiaries;

- imposition of or increases in investment or trade restrictions by the U.S. or by non-U.S. governments or trade sanctions adopted by the U.S.;

- inability to definitively determine or satisfy legal requirements, inability to effectively enforce contract or legal rights and inability to obtain complete financial or other information under local legal, judicial, regulatory, disclosure and other systems; and

- nationalization or expropriation of assets, and other risks which could result from a change in government or government policy, or from other political, social or economic instability.

We cannot assure you that such risks will not have a material adverse effect on us or that we would be able to mitigate such material adverse effects in the future.

In addition to the factors noted above, our results of operations and financial condition are affected by inflation, deflation and stagflation in each country in which we have a manufacturing facility. We cannot assure you that future increases in our costs will not exceed the rate of inflation or the amounts, if any, by which we may be able to increase prices for our products.

Our ability to grow and compete effectively depends on protecting our intellectual property. Failure to protect our intellectual property could adversely affect us.

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. Some of our intellectual

property is not covered by any patent or patent application or any such agreement.

Patents are subject to complex factual and legal considerations. Accordingly, there can be uncertainty as to the validity, scope and enforceability of any particular patent. Therefore, we cannot assure you that:

- any of the U.S. or foreign 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;

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any of the U.S. or foreign 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 sought by us.

Moreover, patents, even if valid, only provide protection for a specified limited duration.

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 to intellectual property arising out of our relationships with them.

In addition, effective patent, trademark and trade secret protection may be limited, unavailable or not applied for in the U.S. or in any of the foreign countries in which we operate.

Further, 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.

Intellectual property protection does not protect against technological obsolescence due to developments by others or changes in customer needs.

The protection of our intellectual property rights may be achieved, in part, by prosecuting claims against others whom 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.

If necessary, we may seek licenses to intellectual property of others. However, we can give no assurance to you that we will be able to obtain such licenses or that the terms of any such licenses will be acceptable to us. Our failure to obtain a license from a third party for its intellectual property that is necessary for us to make or sell any of our products could cause us to incur substantial liabilities and to suspend the manufacture or shipment of products or use of processes requiring the use of such intellectual property.

Our current and former manufacturing operations are subject to increasingly stringent health, safety and environmental requirements.

We use and generate hazardous substances in our manufacturing operations. In addition, both the properties on which we currently operate and those on which we have ceased operations are and have been used for industrial purposes. Further, our manufacturing operations involve risks of personal injury or death. We are subject to increasingly stringent environmental, health and safety laws and regulations relating to our current and former properties, neighboring properties, and our current raw materials, products, and operations. These laws and regulations provide for substantial fines and criminal sanctions for violations and sometimes require evaluation and registration of the installation of costly pollution control or safety equipment or costly changes in operations to limit pollution or decrease the likelihood of injuries. It is also possible that the impact of such regulations on our suppliers could affect the availability and cost of our raw materials. In addition, we may become subject to potential material liabilities for the investigation and cleanup of contaminated properties, for claims alleging personal injury or property damage resulting from exposure to or releases of hazardous substances, or for personal injury as a result of 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 could be material.

We may face risks related to greenhouse gas emission limitations and climate change.

There is growing scientific, political and public concern that emissions of greenhouse gases (GHG) are

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altering the atmosphere in ways that are affecting, and are expected to continue to affect, the global climate. Legislators, regulators and others, as well as many companies, are considering ways to reduce GHG emissions. GHG emissions are regulated in the European Union via an Emissions Trading Scheme (ETS), aka a Cap and Trade program. In the United States, environmental regulations issued in 2009 and 2010 will require reporting of GHG emissions by defined industries, activities and suppliers, and will regulate GHG as a pollutant covered under the New Source Review, Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs of the Clean Air Act Amendments. It is possible that some form of regulation of GHG emissions will also be forthcoming 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 program expenses, including capital improvements, environmental monitoring, and the purchase of emission credits, and other administrative costs necessary to comply with current requirements 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, such regulation may impact our ability to compete with companies located in countries that do not have such requirements or do not impose such limitations. The company may also realize 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 products produced by the company. 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 point in time.

The potential physical impacts of climate change on the company s 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, the company s Seadrift facility and those facilities supplying it, and the company s Calais facility, 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. Due to these uncertainties, any future physical effects of climate change may or may not adversely affect the operations at each of our production facilities, the availability of raw materials, the transportation of our products, the overall costs of conducting our business, and the company s financial performance.

We face certain litigation and legal proceedings risks that could harm our business.

We are involved in various product liability, occupational, environmental, and other legal claims, demands, lawsuits and other proceedings arising out of or incidental to the conduct of our business. The results of these proceedings are difficult to predict. Moreover, many of these proceedings do not specify the relief or amount of damages sought. Therefore, as to a number of the proceedings, we are unable to estimate the possible range of liability that might be incurred should these proceedings be resolved against us. Certain of these matters involve types of claims that, if resolved against us, could give rise to substantial liability, which could have a material adverse effect on our financial position, liquidity and results of operations.

We are dependent on supplies of raw materials and energy. Our results of operations could deteriorate if that supply is 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;
- supplier s allocations to meet demand of other purchasers during periods of shortage (or, in the case of energy suppliers, extended cold weather);

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interruptions or cessations in production by suppliers, and

market and other events and conditions.

Petroleum and coal products, including decant oil, petroleum coke and pitch, our principal raw materials, and energy, particularly natural gas, have been subject to significant price fluctuations.

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.

A substantial increase in raw material or energy prices which cannot be mitigated or passed on to customers or a continued interruption in supply, particularly in the supply of decant oil, petroleum coke or energy, would have a material adverse effect on us.

Seadrift could be impacted by the availability of low sulfur decant oil and the pricing of needle coke feedstocks.

Seadrift uses low sulfur decant oil in the manufacture of needle coke. There is no assurance that Seadrift will always be able to obtain an adequate quantity of suitable feedstocks or that capital would be available to install equipment to allow for utilization of higher sulfur decant oil, which is more readily available in the United States, in the event that suppliers of lower sulfur decant oil were to become more limited in the future. Seadrift purchases approximately two million barrels of low sulfur decant oil annually. The prices paid by Seadrift for such feedstocks are governed by the market for heavy fuel oils, which prices can fluctuate widely for various reasons including, among other things, worldwide oil shortages and cold winter weather. The substantial majority of Seadrift s needle coke is used in the manufacture of graphite electrodes, the price of which is subject to rigorous industry competition thus restricting Seadrift s ability to pass through raw material price increases.

There may be significant risks associated with acquisition activities that we may elect to pursue.

We may seek to acquire other companies or product lines which are complementary to our existing businesses and product lines or to add new businesses and product lines. Any such future acquisitions that we may elect to pursue will be accompanied by the risks commonly encountered in such transactions. Such risks include, among others:

the difficulty of identifying appropriate acquisition candidates;

the difficulty of assimilating the operations and personnel of the acquired entities;

the potential disruption of our ongoing business;

the potential incurrence of new debt or the issuance of new equity that could increase our leverage or dilute our stockholders equity interests;

our inability to capitalize on the opportunities presented by acquisitions; and

our failure to implement and maintain uniform standards, controls, procedures and policies at any acquired businesses.

Further, to the extent that any such transaction may involve businesses located outside the United States, the transaction would involve the additional risks associated with international operations described above. We cannot assure you that we will be successful in overcoming these risks or any other problems encountered with any acquisitions we may pursue. Any failure to overcome these risks and successfully integrate acquired businesses could have a material adverse effect on our financial position, liquidity and results of operations. See We are subject to risks associated with operations in multiple countries.

We may face significant challenges in integrating Seadrift s and C/G s respective business operations with our own.

We may face significant challenges in integrating Seadrift s and C/G s respective business operations with our own in a timely and efficient manner. This may prove difficult because our businesses and products are highly complex, have been developed independently and were designed without regard to such integration. These challenges will include the following:

Although petroleum coke is the primary raw material in our manufacturing process, in the

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past we have purchased our requirements of petroleum coke from third parties and have no prior experience in its production. This will represent a new business for us and the effort to vertically integrate our supply chain may involve presently unforeseen costs and delays.

We expect to incur significant capital costs integrating Seadrift s and C/G s operations and products. These costs may include costs for (i) maintenance capital, (ii) capital necessary for quality improvements, and (iii) capital and other costs and expenditures related to facility stability necessary to achieve production plans.

Successful integration of Seadrift and C/G with our operations, products and personnel may place a significant burden on our management and our other internal resources. The diversion of management s attention and any difficulties encountered in the integration process may adversely affect our other businesses and results of operations.

Although we expect the acquisitions of Seadrift and C/G to result in financial and operational benefits, including increased cost savings and other benefits, there can be no assurance regarding when, or to what extent, the combined companies will be able to realize these financial and operational benefits.

We may need to integrate, or in some cases replace, numerous systems, including those involving management information, purchasing, accounting and finance, sales, billing, employee benefits, payroll and regulatory compliance, many of which are dissimilar.

If we cannot successfully meet these challenges, integrate our businesses and continue to provide customers with products and new product features in the future on a timely basis, we may lose customers and our business and operations may be harmed. Difficulties associated with integrating Seadrift and C/G and a failure to achieve anticipated financial and operational benefits could have a material adverse effect on the combined companies and the market price of our common stock.

Our results of operations could deteriorate if our manufacturing operations were substantially disrupted for an extended period.

Our manufacturing operations are subject to disruption due to extreme weather conditions, floods, hurricanes and tropical storms and similar events, major industrial accidents, 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, and other events. We cannot assure you that no such events will occur. If such an event occurs, it could have a material adverse effect on us.

We have significant non-dollar-denominated intercompany loans and have had in the past, and may in the future have, foreign currency financial instruments and interest rate swaps and caps. The related gains and losses have in the past been, and may in the future be, significant.

As part of our cash management, we have non-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 / losses in other income (expense), net, on the Consolidated Statements of Income.

Additionally, we have in the past entered into, and may in the future enter into, interest rate swaps and caps to attempt to manage interest rate expense. We have also in the past entered into, and may in the future enter into, foreign currency financial instruments to attempt to hedge global currency exposures. We may purchase or sell these financial instruments, and open and close hedges or other positions, at any time. Changes in currency exchange rates or interest rates have in the past resulted, and may in the future result, in significant gains or losses with respect thereto. These instruments are marked-to-market monthly and gains and losses thereon are recorded in Other Comprehensive Income in the Consolidated Balance Sheets.

There may be volatility in our results of operations between quarters.

Sales of our products fluctuate from quarter to quarter due to such factors as changes in economic

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conditions, changes in competitive conditions, scheduled plant shutdowns by customers, national vacation practices, changes in customer production schedules in response to seasonal changes in energy costs, weather conditions, strikes and work stoppages at customer plants and changes in customer order patterns including those in response to the announcement of price increases or price adjustments. We have experienced, and expect to continue to experience, volatility with respect to demand for and prices of our industrial material products, specifically graphite electrodes, both globally and regionally. We have also experienced volatility with respect to prices of raw materials and energy, and we expect to experience volatility in such prices in the future. Accordingly, results of operations for any quarter are not necessarily indicative of the results of operations for a full year.

The graphite and carbon 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 and carbon products industry (other than, generally, with respect to new products) is based primarily on price, product differentiation and quality, delivery reliability, and customer service. Electrodes, in particular, are subject to rigorous price competition. In such a competitive market, changes in market conditions, including customer demand and technological development, could adversely affect our competitiveness, sales and/or profitability.

Competition with respect to new products is, and is expected to be, generally based primarily on product innovation, price, performance and cost effectiveness as well as customer service.

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.

We have significant deferred income tax assets in multiple jurisdictions, and we may not be able to realize any benefits from those assets.

At December 31, 2010 we had $155.7 million of gross deferred income tax assets, of which $80.8 million required a valuation allowance. In addition, we had $142.7 million of gross deferred income tax liabilities. Our valuation allowance means that we do not believe that these assets are more likely than not to be realized. Until we determine that it is more likely than not that we will generate sufficient taxable income to realize our deferred income tax assets, income tax benefits in each current period will be fully reserved.

Our valuation allowance, which is predominantly in the U.S. tax jurisdiction, does not affect our ability and intent to utilize the deferred income tax assets as we generate sufficient future profitability. We are executing current strategies and developing future strategies, to improve sales, reduce costs and improve our capital structure in order to improve U.S. taxable income of the appropriate character to a level sufficient to fully realize these benefits in future years.

RISKS RELATING TO OUR SECURITIES

To the extent that outstanding options to purchase shares of our common stock are exercised or other equity awards are granted under our incentive plans, the ownership interests of our other stockholders will be diluted.

Our stock price may be volatile due to the nature of our business as well as the nature of the securities markets, which could affect the value of an investment in our common stock. Companies that have experienced volatility in the market price of their stock have been the subject of securities class action litigation which involves substantial costs and a diversion of those companies management s attention and resources. Many factors may cause the market price for our common stock to decline or fluctuate, perhaps substantially, including:

- failure of net sales, results of operations or cash flows from operations to meet the expectations of securities analysts or investors;
- recording of additional restructuring, impairment or other charges or costs;
- downward revisions in revenue, earnings or cash flow estimates of securities analysts;

downward revisions or announcements that indicate possible downward revisions in the ratings on debt instruments that we may have outstanding from time to time, if any;

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speculation in the press or investor perception concerning our industry or our prospects; and

changes in general capital market conditions.

FORWARD LOOKING STATEMENTS

This Report contains forward looking statements. In addition, we or our representatives have made or may make forward looking statements on telephone or conference calls, by webcasts or emails, in person, in presentations or written materials, or otherwise. These include statements about such matters as: expected future or targeted operational and financial performance; growth rates and future production and sales of products that incorporate or that are produced using our products; changes in production capacity in our operations and our competitors or customers operations and the utilization rates of that capacity; growth rates for, future prices and sales of, and demand for our products and our customers products; costs of materials and production, including anticipated increases or decreases therein, our ability to pass on any such increases in our product prices or surcharges thereon, or customer or market demand to reduce our prices due to such decreases; changes in customer order patterns due to changes in economic conditions; productivity, business process and operational initiatives, and their impact on us; our position in markets we serve; financing and refinancing activities; investments and acquisitions that we have made or may make in the future and the performance of the businesses underlying such acquisitions and investments; employment and contributions of key personnel; employee relations and collective bargaining agreements covering many of our operations; tax rates; capital expenditures and their impact on us; nature and timing of restructuring charges and payments; strategic plans and business projects; regional and global economic and industry market conditions, the timing and magnitude of changes in such conditions and the impact thereof; interest rate management activities; currency rate management activities; deleveraging activities; rationalization, restructuring, realignment, strategic alliance, raw material and supply chain, technology development and collaboration, investment, acquisition, venture, operational, tax, financial and capital projects; legal proceedings, contingencies, and environmental compliance including any regulatory initiatives with respect to greenhouse gas emissions which may be proposed; consulting projects; potential offerings, sales and other actions regarding debt or equity securities of us or our subsidiaries; and costs, working capital, revenues, business opportunities, debt levels, cash flows, cost savings and reductions, margins, earnings and growth. The words **will**, **may**, **plan**, **estimate**, **project**, **believe**, **anticipate**, **expect**, **intend**, **should**, **would**, **could**, **target**, **goal,** similar expressions, or the negatives thereof, identify some of these statements.

Our expectations and targets are not predictors of actual performance and historically our performance has deviated, often significantly, from our expectations and targets. Actual future events and circumstances (including future results and trends) could differ materially, positively or negatively, from those set forth in these statements due to various factors. These factors include:

the possibility that additions to capacity for producing EAF steel, increases in overall EAF steel production capacity, and increases or other changes in steel production may not occur or may not occur at the rates that we anticipate or may not be as geographically disbursed as we anticipate;

the possibility that increases or decreases in graphite electrode manufacturing capacity (including growth by producers in developing countries), competitive pressures (including changes in and the mix, distribution, and pricing of their products), reduction in specific consumption rates, increases or decreases in customer inventory levels, or other changes in the graphite electrode markets may occur, which may impact demand for, prices or unit and dollar volume sales of graphite electrodes and growth or profitability of our graphite electrodes business;

the possible failure of changes in EAF steel production or graphite electrode production to result in stable or increased, or offset decreases in, graphite electrode demand, prices, or sales volume;

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the possibility that a determination by the U.S. government that we have failed to comply with one or more export controls or trade sanctions to which we are subject with respect to products exported from the United States or otherwise subject to U.S. jurisdictions could result in civil or criminal penalties, including imposition of significant fines, denial or export privileges and loss of revenues from certain customers;

the possibility that, for all of our product lines, capital improvement and expansion in our customers operations and increases in demand for their products may not occur or may not occur at the rates that we anticipate or the demand for their products may decline, which may affect their demand for the products we sell or supply to them;

the possibility that continued global consolidation of the world s largest steel producers could impact our business or industry;

the possibility that average graphite electrode revenue per metric ton in the future may be different than current spot or market prices due to changes in product mix, changes in currency exchange rates, changes in competitive market conditions or other factors;

the possibility that price increases, adjustments or surcharges may not be realized or that price decreases may occur;

the possibility that current challenging economic conditions and economic demand reduction may continue to impact our revenues and costs;

the possibility that decreases in prices for energy and raw materials may lead to downward pressure on prices for our products and delays in customer orders for our products as customers anticipate possible future lower prices;

the possibility that increases in prices for our raw materials and the magnitude of such increases, global events that influence energy pricing and availability, increases in our energy needs, or other developments may adversely impact or offset our productivity and cost containment initiatives;

the possibility that current economic disruptions may result in idling or permanent closing of blast furnace capacity or delay of blast furnace capacity additions or replacements which may affect demand and prices for our refractory products;

the possibility that economic, political and other risks with operating globally, including national and international conflicts, terrorist acts, political and economic instability, civil unrest, and natural calamities might interfere with our supply chains, customers or activities in a particular location;

the possibility that reductions in customers production, increases in competitors capacity, competitive pressures, or other changes in other markets we serve may occur, which may impact demand for, prices of or unit and dollar volume sales of, our other products, or growth or profitability of our other product lines, or change our position in such markets;

the possibility that we will not be able to hire and retain key personnel or to renew or extend our collective bargaining or similar agreements on reasonable terms as they expire or to do so without a work stoppage or strike, including at our Clarksburg, West Virginia facility where its primary collective bargaining agreement with the United Steelworkers (USW) has expired by its terms in June 2010. Our Clarksburg facility manufactures specialty graphite products. Our bargaining unit team members have continued to work without a contract. We continue to meet and negotiate in good faith with the USW. To date there has been no

disruption to our operations or ability to meet delivery targets as a result of the negotiations. While we have positive expectations that there will not be a work stoppage, there is the possibility of a work stoppage or other disruption in our Clarksburg operations. We

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have developed plans to address potential contingencies. However, there is the possibility that any work stoppage or disruption could adversely impact our specialties graphite business;

the potential unpredictability of litigation pending in Brazil involving disputes arising out of the interpretation of certain collectively bargained wage increase provisions applicable in 1989 and 1990 to employers (including our subsidiary in Brazil) in the Bahia region of Brazil. While the most recent ruling by the Supreme Court of Brazil has held that such provisions are not enforceable, and thus employers are not liable for the wage increases claimed on behalf of employees, further proceedings are pending seeking to reverse that ruling. While we cannot predict the outcome of the pending proceedings, if the wage increase provisions are declared enforceable, claims could be filed against our Brazilian subsidiary which could become substantial;

the possibility of delays in or failure to achieve successful development and commercialization of new or improved engineered solutions or that such solutions could be subsequently displaced by other products or technologies;

the possibility that we will fail to develop new customers or applications for our engineered solutions products;

the possibility that our manufacturing capabilities may not be sufficient or that we may experience delays in expanding or fail to expand our manufacturing capacity to meet demand for existing, new or improved products;

the possibility that the investments and acquisitions that we make or may make in the future may not be successfully integrated into our business or provide the performance or returns expected;

the possibility that challenging conditions or changes in the capital markets will limit our ability to obtain financing for growth and other initiatives, on acceptable terms or at all;

the possibility that conditions or changes in the global equity markets may have a material impact on our future pension funding obligations and liabilities on our balance sheet;

the possibility that the amount or timing of our anticipated capital expenditures may be limited by our financial resources or financing arrangements or that our ability to complete capital projects may not occur timely enough to adapt to changes in market conditions or changes in regulatory requirements;

the possibility that the actual outcome of uncertainties associated with assumptions and estimates using judgment when applying critical accounting policies and preparing financial statements may have a material impact on our results of operations or financial position;

the possibility that we may be unable to protect our intellectual property or may infringe the intellectual property rights of others, resulting in damages, limitations on our ability to produce or sell products or limitations on our ability to prevent others from using that intellectual property to produce or sell products;

the occurrence of unanticipated events or circumstances or changing interpretations and enforcement agendas relating to legal proceedings or compliance programs;

the occurrence of unanticipated events or circumstances or changing interpretations and enforcement agendas relating to health, safety or environmental compliance or remediation obligations or liabilities to third parties or relating to labor relations;

the possibility that new or expanded regulatory initiatives with respect to greenhouse gas emissions, if implemented, could have an impact on our facilities, increase the capital intensive nature of our business, and add to our costs of production of our products;

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the possibility that our provision for income taxes and effective income tax rate or cash tax rate may fluctuate significantly due to changes in applicable tax rates or laws, changes in the sources of our income, changes in tax planning, new or changing interpretations of applicable regulations, or changes in profitability, estimates of future ability to use foreign tax credits, and other factors;

the possibility of changes in interest or currency exchange rates, in competitive conditions, or in inflation or deflation;

the possibility that our outlook could be significantly impacted by, among other things, changes in United States or other monetary or fiscal policies or regulations in response to the capital markets crisis and its impact on global economic conditions, developments in the Middle East, North Korea, and other areas of concern, the occurrence of further terrorist acts and developments (including increases in security, insurance, data back-up, energy and transportation and other costs, transportation delays and continuing or increased economic uncertainty and weakness) resulting from terrorist acts and the war on terrorism;

the possibility that our outlook could be significantly impacted by changes in demand as a result of the effect on customers of the volatility in global credit and equity markets;

the possibility that interruption in our major raw material, energy or utility supplies due to, among other things, natural disasters, process interruptions, actions by producers and capacity limitations, may adversely affect our ability to manufacture and supply our products or result in higher costs;

the possibility of interruptions in production at our facilities due to, among other things, critical equipment failure, which may adversely affect our ability to manufacture and supply our products or result in higher costs;

the possibility that we may not achieve the earnings or other financial or operational metrics that we provide as guidance from time to time;

the possibility that the anticipated benefits from organizational and work process redesign, changes in our information systems, or other system changes, including operating efficiencies, production cost savings and improved operational performance, including leveraging infrastructure for greater productivity and contributions to our continued growth, may be delayed or may not occur or may result in unanticipated disruption;

the possibility that our disclosure or internal controls may become inadequate because of changes in conditions or personnel, that the degree of compliance with our policies and procedures related to those controls may deteriorate or that those controls may not operate effectively and may not prevent or detect misstatements or errors;

the possibility that delays may occur in the financial statement closing process due to a change in our internal control environment or personnel;

the possibility of changes in performance that may affect financial covenant compliance or funds available for borrowing; and

other risks and uncertainties, including those described elsewhere in this Report or our other SEC filings, as well as future decisions by us.

Occurrence of any of the events or circumstances described above could also have a material adverse effect on our business, financial condition, results of operations, cash flows or the market price of our common stock.

No assurance can be given that any future transaction about which forward looking statements may be made will be completed or as to the timing or terms of any such transaction.

All subsequent written and oral forward looking statements by or attributable to us or persons acting on our behalf are expressly qualified in their entirety by these factors. Except as otherwise required to be disclosed in periodic reports required to be filed by public companies with the SEC pursuant to the SEC s rules, we have no duty to update these statements.

Item 1B. Unresolved Staff Comments

Not applicable.

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Item 2. Properties

We currently operate the following facilities, which are owned or leased as indicated.

Location of Facility	Primary Use	Owned or Leased
U.S.		
Parma, Ohio	Corporate Headquarters, Technology Center, Testing Facility, Pilot Plant, Advanced Flexible Graphite Manufacturing Facility and Sales Office	Owned
Lakewood, Ohio	Flexible Graphite Manufacturing Facility and Sales Office	Owned
Columbia, Tennessee	Advanced Graphite Materials and Refractory Products Manufacturing, Warehousing Facility and Sales Office	Owned
Lawrenceburg, Tennessee	Refractory Products Manufacturing Facility	Owned
Clarksburg, West Virginia	Advanced Graphite Materials Manufacturing Facility and Sales Office	Owned
St. Marys, Pennsylvania	Graphite Electrode Manufacturing Facility	Owned
Port Lavaca, Texas	Needle Coke Manufacturing Facility	Owned
Europe		
Calais, France	Graphite Electrode Manufacturing Facility	Owned
Notre Dame, France	Advanced Graphite Materials Machine Shop and Sales Office	Owned
Malonno, Italy	Advanced Graphite Materials Manufacturing and Machine Shop and Sales Office	Owned
Moscow, Russia	Sales Office	Leased
Vyazma, Russia	Graphite Electrode Materials Machine Shop	Leased
Pamplona, Spain	Graphite Electrode Manufacturing Facility and Sales Office	Owned
Bussigny, Switzerland	Sales Office	Leased
Other International		
Salvador Bahia, Brazil	Graphite Electrode and Advanced Graphite Materials Manufacturing Facility	Owned
Sao Paulo, Brazil	Sales Office	Leased
Beijing, China	Sales Office	Leased
Hong Kong, China	Sales Office	Leased
Shanghai, China	Sales Office	Leased
Monterrey, Mexico	Graphite Electrode Manufacturing Facility and Sales Office	Owned
Meyerton, South Africa	Graphite Electrode and Advanced Graphite Materials Manufacturing Facility and Sales Office	Owned

We believe that our facilities, which are of varying ages and types of construction, are in good condition, are suitable for our operations and generally provide sufficient capacity to meet our requirements for the foreseeable future.

Item 3. Legal Proceedings

The information required by Item 3 is set forth in Note 14, *Contingencies* of the Notes to the Consolidated Financial Statements and is incorporated herein by reference.

Item 4. [Removed and Reserved]

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PART II

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

MARKET INFORMATION

Our common stock is listed on the NYSE under the trading symbol GTI. Our common stock is included in the Russell 2000 Index. The closing sale price of our common stock was $19.84 on December 31, 2010, the last trading day of our most recent fiscal year. The following table sets forth, for the periods indicated, the high and low closing sales price per share for our common stock as reported by the NYSE.

	High	Low
2009		
First Quarter	$ 9.83	$ 5.00
Second Quarter	12.79	6.46
Third Quarter	15.87	10.12
Fourth Quarter	16.58	12.67
2010		
First Quarter	$ 16.34	$ 11.88
Second Quarter	17.26	13.43
Third Quarter	17.10	14.06
Fourth Quarter	20.75	15.50

At January 31, 2011, there were 133 stockholders of record and, we estimate, 33,114 beneficial owners.

DIVIDEND POLICIES AND RESTRICTIONS

It is the current policy of our Board of Directors to retain earnings to finance strategic and other plans and programs, conduct business operations, fund acquisitions, meet obligations and repay debt. Any declaration and payment of cash dividends or repurchases of common stock will be subject to the discretion of our Board of Directors and will be dependent upon our financial condition, results of operations, cash requirements and future prospects, the limitations contained in the Revolving Facility and other factors deemed relevant by our Board of Directors. We did not pay any cash dividends in 2009 or 2010. We periodically review our dividend policy. At the present time, there are no plans for paying cash dividends in the near future.

In December 2007, our Board of Directors approved a share repurchase program authorizing the purchase of up to 3 million shares of our common stock. Share repurchases may take place from time to time in the open market, or through privately negotiated transactions, as market conditions warrant. We have in the past funded and intend in the future to fund, any such share repurchases from available cash and cash flows. These share repurchases may be suspended or discontinued at any time. During 2008, we purchased 948,095 shares under this program. During 2009 and 2010 we did not purchase any shares under this program. The maximum number of shares that may yet be purchased under the program was 2,051,905 at December 31, 2010.

In addition to the above repurchase program, we occasionally purchase or withhold shares from employee equity awards to cover withholding taxes.

GTI is a holding company that derives substantially all of its cash flow from issuances of its securities and cash flows of its subsidiaries. Accordingly, GTI s ability to pay dividends or repurchase common stock from cash flow from sources other than issuance of its securities is dependent upon the cash flows of its subsidiaries and the advance or distribution of those cash flows to GTI.

Under the Revolving Facility, in general, GTI is permitted to pay dividends and repurchase common stock in an aggregate amount (cumulative from April 2010) equal up to $75 million (or $300 million, if certain leverage ratio requirements are satisfied), plus, each year, an aggregate amount equal to 50% of the consolidated net income in the prior year.

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Performance Graph

The following graph compares the 5-year total return provided to shareholders of our common stock to the cumulative total return of the Dow Jones Industrial Average and the Russell 2000 Index. An investment of $100 is assumed to have been made in our common stock and in each of the indexes on December 31, 2005 and its relative performance is tracked through December 31, 2010.

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Item 6. Selected Financial Data

The data set forth below should be read in conjunction with Part I. Preliminary Notes-Presentation of Financial, Market and Legal Data, Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and Notes thereto.

	Year Ended December 31,				
	2006	**2007**	**2008**	**2009**	**2010**
	(Dollars in thousands)				
Statement of Operations Data:					
Net sales	$ 855,433	$ 1,004,818	$ 1,190,238	$ 659,044	$ 1,006,993
Income from continuing operations (a)	35,437	148,673	200,515	12,550	175,068
Basic earnings per common share:					
Income from continuing operations	$ 0.36	$ 1.48	$ 1.80	$ 0.10	$ 1.43
Income (loss) from discontinued operations (b)	0.50	(0.02)			
Net income	$ 0.86	$ 1.46	$ 1.80	$ 0.10	$ 1.43
Weighted average common shares outstanding (*in thousands*)	97,965	100,468	111,447	119,707	122,621
Diluted earnings per common share:					
Income from continuing operations	$ 0.36	$ 1.39	$ 1.74	$ 0.10	$ 1.42
Income (loss) from discontinued operations (b)	0.50	(0.02)			
Net income	$ 0.86	$ 1.37	$ 1.74	$ 0.10	$ 1.42
Weighted average common shares outstanding (*in thousands*)	98,582	116,343	119,039	120,733	123,453
Balance sheet data (at period end):					
Total assets	$ 918,040	$ 875,878	$ 943,129	$ 892,608	$ 1,913,183
Other long-term obligations (c)	103,408	94,010	118,272	108,267	114,728
Total long-term debt	631,108	399,586	50,557	1,467	275,799
Other financial data:					
Net cash provided by operating activities	$ 64,181	$ 130,772	$ 248,636	$ 170,329	$ 144,922
Net cash provided by (used in) investing activities	118,538	(26,525)	(209,858)	(60,110)	(321,552)
Net cash (used in) provided by financing activities	(39,568)	(199,726)	(80,215)	(72,875)	138,240

(a) Income from continuing operations by period includes
For the Year Ended December 31, 2006:

a $10.0 million restructuring expense associated with the rationalization of our graphite electrode facilities, including those in France and the United States,

a $1.8 million expense associated with the closure of our graphite electrodes manufacturing operations in Caserta, Italy,

a $1.4 million expense associated with the relocation of our corporate headquarters from Wilmington, Delaware to Parma, Ohio,

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a $2.7 million expense for severance and other costs related to the shutdown of our carbon electrode production operations in Columbia, Tennessee,

a $6.6 million impairment for the abandonment of capitalized costs related to our enterprise resource planning system, caused by indefinite delays in the implementation of remaining facilities,

a $1.4 million impairment for the write-down of long-lived assets in our former Etoy, Switzerland facility, as the estimated fair value less selling costs exceeded book value,

a $0.8 million loss for the abandonment of certain long-lived assets associated with the accelerated closing of our carbon electrode facility in Columbia, Tennessee,

a $1.7 million loss for the abandonment of certain fixed assets related to our graphite electrode operations,

a $2.5 million expense for the settlement of three foreign customer lawsuits associated with anti-trust lawsuits and related items,

a $23.3 million expense for our incentive compensation program.

For the Year Ended December 31, 2007:

a $1.4 million expense for restructuring, pertaining primarily to a $0.7 million expense associated with the phase out of our graphite electrode machining and warehousing operations in Clarksville, Tennessee and a $0.5 million expense associated with changes in estimates of the timing and amounts of severance and related payments to certain employees in Caserta, Italy,

a $23.5 million expense for our incentive compensation program,

a $23.7 million gain from the sale of our Caserta, Italy facility,

a $1.3 million gain from the sale of our Vyazma, Russia facility,

a $13.0 million loss on extinguishment on the repurchase of Senior Notes,

a $2.3 million ($0.7 million, net of tax) discontinued operations gain for purchase price adjustments related to our cathodes sale that occurred in December 2006,

a $1.5 million overstatement of income tax expense from continuing operations related to the correction of our invalid check the box tax election made for our Swiss entity in 2004,

a $4.4 million expense for the settlement of our pension obligations in South Africa.

For the Year Ended December 31, 2008:

a $6.8 million loss on extinguishment on the repurchase of Senior Notes,

a $4.1 million gain on derecognition of the Debentures,

a $9.0 million expense for the Make-Whole provision in connection with the derecognition of the Debentures,

a $22.1 million expense for our incentive compensation program,

a $2.8 million benefit to our income tax provision for tax holidays, exemptions, and credits in various jurisdictions,

a $34.5 million write down of our investment in a non-consolidated affiliate and our $1.7 million share of its losses.

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For the Year Ended December 31, 2009:

- a $52.8 million write down of our investment in a non-consolidated affiliate and our $2.7 million share of its losses
- a $4.3 million gain for the derecognition of our liability for Brazil excise tax,
- a $1.0 million gain from the sale of our Caserta, Italy facility,
- a $0.4 million loss on extinguishment on the repurchase of the remaining Senior Notes outstanding,
- a $5.1 million benefit to our income tax provision for tax holidays, exemptions, and credits in various jurisdictions,
- a $22.8 million valuation allowance expense for deferred tax assets that might not be realized.

For the Year Ended December 31, 2010 (Seadrift and C/G are included in our Consolidated Financial Statements beginning as of December 1, 2010):

- a $15.2 million expense for Seadrift and C/G acquisition-related costs,
- a $4.9 million benefit from the equity in earnings of our then non-consolidated affiliate,
- a $9.6 million gain from the acquisition of the remaining 81.1% equity interest in our previously non-consolidated affiliate,
- a $16.8 million expense for our incentive compensation program,
- a $4.8 million benefit to our income tax provision for tax holidays, exemptions, and credits in various jurisdictions,
- a $30.3 million deferred tax asset valuation allowance release as a result of the 2010 acquisitions.

(b) Income (loss) from discontinued operations is comprised of the cathode business which we sold in December 2006.

(c) Represents liabilities in connection with completed antitrust investigations and related lawsuits and claims (2006), pension and post-retirement benefits and related costs and miscellaneous other long-term obligations.

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Quarterly Data:

The following quarterly selected consolidated financial data have been derived from the Consolidated Financial Statements for the periods indicated which have not been audited. The selected quarterly consolidated financial data set forth below should be read in conjunction with Part I. Preliminary Notes Presentation of Financial, Market and Legal Data, Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and Notes thereto.

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(Dollars in thousands, except per share data)			
2010				
Net sales	$ 215,664	$ 254,854	$ 255,236	$ 281,239
Gross profit	68,103	74,727	75,032	71,494
Net income (a)	33,528	39,322	24,612	77,606
Basic earnings per common share	$ 0.28	$ 0.33	$ 0.20	$ 0.60
Diluted earnings per common share	$ 0.28	$ 0.32	$ 0.20	$ 0.60

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(Dollars in thousands, except per share data)			
2009				
Net sales	$ 134,026	$ 157,774	$ 164,879	$ 202,365
Gross profit	32,126	45,688	46,533	66,758
Net income (loss) (b)	8,469	(37,091)	6,864	34,308
Basic earnings (loss) per common share	$ 0.07	$ (0.31)	$ 0.06	$ 0.29
Diluted earnings (loss) per common share	$ 0.07	$ (0.31)	$ 0.06	$ 0.28

(a) Net income by quarter for 2010 includes the following:
A loss of $0.8 million from the equity in losses of our then non-consolidated affiliate, Seadrift, in the first quarter,

Income of $3.7 million for currency gains due to the remeasurement of intercompany loans in the first quarter,

A $6.6 million expense for Seadrift and C/G acquisition-related costs in the second quarter,

Income of $1.7 million from the equity in earnings of our then non-consolidated affiliate, Seadrift, in the second quarter,

Income of $9.0 million for currency gains due to the remeasurement of intercompany loans and the effect of transaction gains and losses on intercompany activities in the second quarter,

A $5.7 million expense for Seadrift and C/G acquisition-related costs in the third quarter,

Income of $1.4 million from the equity in earnings of our then non-consolidated affiliate, Seadrift, in the third quarter,

A loss of $9.7 million for currency gains due to the remeasurement of intercompany loans and the effect of transaction gains and losses on intercompany activities in the third quarter,

A $2.9 million expense for Seadrift and C/G acquisition-related costs in the fourth quarter,

Income of $3.2 million for currency gains due to the remeasurement of intercompany loans and the effect of transaction gains and losses on intercompany activities in the fourth quarter, and

A $30.3 million benefit related to deferred tax asset valuation allowance release as a result of the acquisitions in the fourth quarter.

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Income of $2.6 million from the equity in earnings of investment of our then non-consolidated affiliate, Seadrift, in the fourth quarter

Income of $9.6 million relating to the gain recorded after the acquisition of the remaining 81.1% equity interest in our previously non-consolidated affiliate

(b) Net income (loss) by quarter for 2009 includes the following:

A $52.8 million write down of our investment in a non-consolidated affiliate in the second quarter,

A credit of $0.8 million for the reduction of our liability for Brazilian excise taxes in the third quarter,

A gain of $3.5 million for the derecognition of our liability for Brazilian excise taxes in the fourth quarter,

An expense of $0.6 million related to the early termination of our information technology outsourcing services agreement in the fourth quarter,

A U.S. income tax expense of $4.1 million resulting from the currency gain realized on the repayment of intercompany loans in the fourth quarter.

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Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations.

GENERAL

Management s Discussion and Analysis of Financial Condition and Results of Operations (MD&A) is designed to provide information that is supplemental to, and should be read together with, our Consolidated Financial Statements and the accompanying notes. Information in this Item is intended to assist the reader in obtaining an understanding of our Consolidated Financial Statements, the changes in certain key items in those financial statements from year-to-year, the primary factors that accounted for those changes, any known trends or uncertainties that we are aware of that may have a material effect on our future performance, as well as how certain accounting principles affect our Consolidated Financial Statements. In addition, this Item provides information about our business segments and how the results of those segments impact our financial condition and results of operation as a whole.

EXECUTIVE SUMMARY

On November 30, 2010, we announced the acquisitions of Seadrift and C/G. As a result of these acquisitions, our results of operations and MD&A analysis for 2010 include one month of activity of Seadrift and C/G.

We have five major product categories: graphite electrodes, refractory products, needle coke products, advanced graphite materials, and natural graphite products.

Reportable Segments. Our businesses are reported in the following categories:

Industrial materials, which consists of graphite electrodes, refractory products and needle coke products.

Engineered Solutions, which includes advanced graphite materials and natural graphite products.

Reference is made to the information under Part I for background information on our businesses, industry and related matters.

GLOBAL ECONOMIC CONDITIONS AND OUTLOOK

We are impacted in varying degrees, both positively and negatively, as global, regional or country conditions fluctuate. Our discussions about market data and global economic conditions below are based on or derived from published industry accounts and statistics.

2011 Outlook. Based on current International Monetary Fund (IMF) projections and other global economic forecasts, world output is projected to expand an average of 4.5 percent in 2011. However, degrees of growth will vary in both advanced and emerging economies. IMF notes that advanced economies are expected to continue to grow at a subdued pace, while emerging economies are anticipated to advance at a more rapid pace given robust internal demand and strong capital inflows. However, downside risks remain to the stability of the global recovery.

According to the World Steel Association s published reports, global steel operating rates were roughly flat in the fourth quarter of 2010 at 75 percent capacity utilization, as compared to the third quarter of 2010. For the full year 2010, global steel operating rates were 77 percent given stronger first half production levels relative to the second half of 2010. Total steel production levels are expected to improve in 2011; however, operating rates in the primary markets we serve are anticipated to remain below pre-crisis levels.

We expect 2011 results to benefit from improved volumes in our graphite electrode business; however, this impact will be partially offset due to pressure on average graphite electrode selling prices.

For the full year 2011, we are targeting cash flow from operations to be in the range of $185 million to $215 million, an improvement of approximately 40 percent. On the capital front, we are targeting expenditures of approximately $135 million to $150 million in 2011, as we fund internal Engineered Solutions growth initiatives, support Seadrift s and St. Marys quality improvement plans and improve operational efficiency across our global platform. We are targeting 2011 overhead expense to be in the range of $145 million to $155 million. The year-over-year increase largely relates to $17 million amortization of acquisition related intangibles and $10

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million higher administrative expense due to the inclusion of the Seadrift and St. Marys teams.

We are targeting interest expense in the range of $18 million to $20 million, depreciation and amortization expense of approximately $85 million, an effective tax rate in the range of 22 percent to 24 percent and a fully dilute share count of approximate 146 million shares.

Our outlook could be significantly impacted by, among other things, factors described under Item 1A Risk Factors and Item 1A Forward Looking Statements in this Report.

FINANCING TRANSACTIONS

On April 28, 2010, we successfully completed the refinancing of our principal revolving credit facility (Revolving Facility) that was due to expire on July 15, 2010. Borrowers under the Revolving Facility are GrafTech Finance Inc. (GrafTech Finance) and GrafTech Switzerland S.A. (Swissco), both wholly-owned subsidiaries.

As amended and restated, the credit agreement provides for, among other things, an extension until April 29, 2013 of the maturity of our Revolving Facility in the initial amount of $260 million, additional flexibility for investments and acquisitions and, subject to certain conditions, an accordion feature that permits GrafTech Finance and Swissco to establish additional credit facilities thereunder in an aggregate amount, together with our Revolving Facility, of up to $390 million.

We can have outstanding letters of credit of up to $35 million under the Revolving Facility. At December 31, 2010, we had outstanding borrowings of $130.0 million and outstanding letters of credit of $3.4 million under this Revolving Facility.

On November 30, 2010, in connection with the Acquisitions, we issued two Senior Subordinated Notes for an aggregate total face amount of $200 million. These Senior Subordinated Notes are non-interest bearing and mature in 2015, see Note 2 Acquisitions . Because the promissory notes are non-interest bearing, we were required to record them at their present value (determined using an interest rate of 7%). The difference between the face amount of the promissory notes and their present value is recorded as debt discount. The debt discount will be amortized to income using the interest method, over the life of the promissory notes. The loan balance, net of unamortized discount, was $143.4 million at December 31, 2010.

On September 30, 2009, we redeemed all of the remaining outstanding Senior Notes, $19.9 million, at 101.708% plus accrued interest. Total cash paid to redeem the balance of the Senior Notes approximated $20.2 million.

During 2008, we entered into a supply chain financing arrangement, as discussed in more detail under Liquidity and Capital Resources, below. Our purchases of inventory under this arrangement were $37.1 million in 2009 and $186.7 million in 2010.

On occasion we sell accounts receivable without recourse to a third party. During 2009 we sold $32.1 million of receivables. We did not sell any receivables during 2010. See Liquidity and Capital Resources below for further discussion.

PROCEEDINGS AGAINST US

We are involved in various investigations, lawsuits, claims, demands, environmental compliance programs, labor disputes and other legal proceedings arising out of or incidental to the conduct of our business. While it is not possible to determine the ultimate disposition of each of these matters and proceedings, we do not believe that their ultimate disposition will have a material adverse effect on our financial position, results of operations or cash flows.

There is litigation pending in Brazil involving disputes arising out of the interpretation of certain collectively bargained wage increase provisions applicable in 1989 and 1990 to employers (including our subsidiary in Brazil) in the Bahia region of Brazil. We are not currently party to any of the litigation involving the interpretation of the wage increase provisions at issue; however, litigation is pending against other employers in the region and we have learned that several companies in Brazil have recently settled claims arising out of these provisions. While the most recent ruling on the subject by the Supreme Court of Brazil has held that such provisions are not enforceable, and thus employers are not liable for the wage increases claimed on behalf of employees, further proceedings are pending seeking to reverse that ruling and there have been changes in the composition of the Supreme Court in the interim. While we cannot predict the outcome of the pending proceedings, if the Supreme Court reverses its prior decision

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and declares the wage increase provisions enforceable, claims could be filed against our Brazilian subsidiary which could become substantial.

REALIZABILITY OF NET DEFERRED TAX ASSETS AND VALUATION ALLOWANCES

At December 31, 2010 we had $155.7 million of gross deferred income tax assets, of which $74.9 million required a valuation allowance. In addition, we had $142.7 million of gross deferred income tax liabilities. Our valuation allowance means that we do not believe that these assets are more likely than not to be realized. Until we determine that it is more likely than not that we will generate sufficient taxable income to realize our deferred income tax assets, income tax benefits in each current period will be fully reserved.

Our valuation allowance, which is predominately in the U.S. tax jurisdiction, does not affect our ability and intent to utilize the deferred income tax assets as we generate sufficient future profitability. We are executing current strategies and developing future strategies, to improve sales, reduce costs and improve our capital structure in order to improve U.S. taxable income of the appropriate character to a level sufficient to fully realize these benefits in future years.

CUSTOMER BASE

We are a global company and sell our products in every major geographic market. Sales of these products to buyers outside the U.S. accounted for about 83% of net sales in 2008, 82% in 2009, and 80% in 2010. In 2010, four of our ten largest customers were based in Europe, two in the United States, two in South America, one in India and one in China.

In 2010, nine of our ten largest customers were purchasers of our Industrial Materials products. No single customer or group of affiliated customers accounted for more than 10% of our net sales in 2010.

RESULTS OF OPERATIONS AND SEGMENT REVIEW

2010. For most of 2010, companies across the world demonstrated, to varying degrees, a gradual recovery from the reduced production levels experienced during the 2009 global economic downturn. In 2010 we achieved our second highest net sales in our Engineered Solutions segment in our Company s history as demand for our products increased. The graphite electrode restocking initiative, which began in the second half of 2009 continued throughout much of the year in our Industrial Materials segment. Further, EAF capacity utilization rates increased in 2010.

On November 30, 2010, we consummated the acquisitions of Seadrift, a needle coke supplier, and C/G, a producer of graphite electrodes and related products, pursuant to the April 28, 2010 agreements and plans of merger, as described further in Note 2, Acquisitions of the Notes to the Consolidated Financial Statements. The consideration paid to the former owners of Seadrift and C/G aggregated $936.7 million and consisted of cash, shares of our common stock and two Senior Subordinated Notes. These businesses are now incorporated into our existing Industrial Materials segment. With the acquisition of Seadrift we have added another major product category, needle coke products, to the Industrial Materials segment. The analysis below includes the results of operations for Seadrift and C/G for the month of December 2010.

Pursuant to the Seadrift Merger, we acquired from the equity holders of Seadrift the 81.1% of the equity interests in Seadrift that we did not already own. Seadrift is one of the world s largest manufacturers of petroleum-based needle coke and owns the world s only known stand-alone petroleum-based needle coke plant, located in Port Lavaca, Texas. In addition to calcined needle coke, the plant produces naphtha, gas oil and electricity as by-products.

For further discussion on the acquisitions see Note 2, Acquisitions of the Notes to the Consolidated Financial Statements.

2009. For most of 2009 companies across the world experienced the deepest global downturn in recent history. We weathered the 2009 economic recession despite declines in shipments in both our Industrial Materials and Engineered Solutions segments. We remained profitable by adjusting our production to meet customer orders and aggressively controlling costs. We used existing supplies of raw materials which allowed us to conserve cash and reduce our debt.

In September 2009 signs of a slow recovery in the steel industry began to emerge. Government stimulus programs around the world resulted in modest growth in

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several economies resulting in our customers replenishing inventories in order to meet slightly higher utilization rates for steel production. In the second half of 2009 customers restocked their depleted inventories of graphite electrodes in order to meet increasing demand.

The World Steel Association estimates that worldwide steel production was about 1.2 billion metric tons in 2009, an 8.1% decrease compared to 2008. China, which accounted for 47% of the total, increased 21.5% compared to 2008. Non Chinese steel production rose from an average of about 45 million tons per month in the first few months of 2009 to about 60 million tons per month by the end of 2009. While production levels rose in the last half of 2009 compared to the first half, they did not reach the levels of the first half of 2008.

We believe that the worldwide total graphite electrode manufacturing capacity for 2009 was 1.57 million metric tons and that the graphite electrode industry manufacturing capacity utilization rate worldwide was approximately 50% for 2009.

Demand for our engineered solutions products decreased in 2009 as a result of the global recession. We experienced lower sales volume across multiple product lines. We expect our Engineered Solutions segment to begin to recover in the second half of 2010.

2008. Global and regional economic conditions remained relatively stable in the first half of 2008. In September 2008 it became apparent that the global economy was entering into difficult times due to the financial industry crisis. Credit markets became frozen, liquidity diminished, business activity slowed at an extreme pace leading the global economy into its worst crisis in 60 years.

Due to the negative global economic situation and falling steel demand from key steel end markets (automotive, construction, and appliances), a significant number of global steel producers reduced their operating rates in the fourth quarter. We believe that in the graphite electrode markets in which we compete, the capacity utilization rate was over 95% for the first nine months of 2008. Due to the financial crisis and the global economic slowdown, however, operating rates fell dramatically in the fourth quarter of 2008 to an average of 70% and were estimated to be approximately 45% at year end 2008.

The World Steel Association estimated that worldwide steel production was about 1.3 billion metric tons in 2008, about a 1.6% decrease as compared to 2007. China s steel production grew at a much lower rate than in recent years due to a slowdown in economic growth and falling steel demand. In 2008, China s steel production grew by about 1.5%, a significant decline compared to China s recent double-digit annual growth rates. Steel production in the rest of the world declined by 3.5% in 2008.

The percent of EAF to total steel production remained at approximately 31% in 2008. EAF steel production was estimated to have been 405 million metric tons in 2008, about a 2% decrease compared to 2007. For the first nine months of the year, EAF production grew by over 3%, but EAF experienced a decline of 18% in the fourth quarter. China s EAF steel production increased 2% compared to the prior year. The rest of the world s EAF production declined by 3%, as a result of lower operating rates in the fourth quarter.

Demand for our engineered solutions segment increased in 2008 as compared to 2007. The increases were mainly in the energy related markets, including solar, oil and gas exploration, transportation industries, and ETM markets.

The tables presented in our year-over-year comparisons summarize our consolidated statements of income and illustrate key financial indicators used to assess the consolidated financial results. Financial information is presented for the years ended December 31, 2008, 2009, and 2010. Throughout our MD&A, percentage changes that are both less than 5% and less than $1.0 million, are deemed to be not meaningful and are designated as NM .

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Results of Operations for 2010 as Compared to 2009

(in thousands, except per share data and % change)

	2009	2010	Increase (Decrease)	% Change
Net sales	$ 659,044	$ 1,006,993	$ 347,949	53
Cost of sales	467,939	717,637	249,698	53
Gross profit	191,105	289,356	98,251	51
Research and development	10,168	12,330	2,162	21
Selling and administrative expenses	82,325	117,844	35,519	43
Operating income	98,612	159,182	60,570	61
Equity in losses (earnings) of, write-down of investment in and gain recorded on acquisition of non-consolidated affiliate	55,488	(14,500)	(69,988)	(126)
Other expense (income), net	1,868	(4,768)	(6,636)	(355)
Interest expense	5,609	5,076	(533)	NM
Interest income	(1,047)	(1,333)	286	NM
Income before provision for income taxes	36,694	174,707	138,013	376
Provision (benefit) for income taxes	24,144	(361)	(24,505)	(101)
Net income	$ 12,550	$ 175,068	$ 162,518	1,295
Basic income per common share	$ 0.10	$ 1.43	$ 1.33	
Diluted income per common share	$ 0.10	$ 1.42	$ 1.32	

Net sales. Net sales by operating segment for the years ended December 31, 2009 and 2010 were:

(in thousands, except per share data and % change)

	2009	2010	Increase (Decrease)	% Change
Industrial materials	$ 538,126	$ 833,892	$ 295,766	55
Engineered solutions	120,918	173,101	52,183	43
Total net sales	$ 659,044	$ 1,006,993	$ 347,949	53

We experienced higher sales for both of our operating segments as a result of the improved global economic conditions in 2010. Our Industrial Materials operating segment benefitted from the restocking efforts of many of our customers, which began in the second half of 2009 and continued through 2010, as well as the inclusion of Seadrift and C/G for the month of December 2010. Our Engineered Solutions segment also saw benefits as a result of the recovering economy, as customers started the reordering process in response to increasing orders and production.

Our analysis of the percentage change in net sales for Industrial Materials and Engineered Solutions is set forth in the following table:

	Volume	Price/Mix	Currency	Net Change
Industrial Materials	65%	(6%)	(4%)	55%

Engineered Solutions	48%	(3%)	(2%)	43%

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Net sales. Sales for the Industrial Materials segment increased significantly in 2010 when compared to 2009 due to higher graphite electrode sales volume. Partially offsetting this increased demand, we saw the weighted average selling price of our melter and non-melter graphite electrodes decrease by approximately 7%, exclusive of currency impacts, in 2010 when compared to 2009. Higher period over period electrode sales volumes are expected to continue to mitigate, in part, the lower electrode pricing. Our Engineered Solutions segment also saw a significant increase in volumes in 2010, offset slightly by an unfavorable price/mix, and currency impacts.

Cost of sales. The primary drivers of the increase in cost of sales were increases in shipments of our products of $198.8 million, production costs of $28.9 million and unfavorable foreign currency impact of $7.6 million, across both of our segments during 2010 when compared to 2009. The 2010 cost of sales also included the amortization expense related to the technology intangible asset acquired in the acquisitions of Seadrift and C/G of $0.5 million. The global recession led to a dramatic decline in the demand for, and corresponding production of, graphite electrodes during the first nine months of 2009. Our production volume began increasing in the second half of 2009 and continued to increase in the first half of 2010 before leveling off in the second half of the year as our customers ramped up production from the low levels experienced during the first half of 2009.

Needle coke is the primary raw material in the manufacture of graphite electrodes. We have traditionally purchased 70% to 80% of our needle coke requirements from one supplier under contracts with one-year firm price per metric ton schedules. Our production in 2010 began to use higher cost needle coke purchased in the fourth quarter of 2009, at prices which were approximately 45% higher than the cost of needle coke used in production during the first nine months of 2009. The inventory flow through of the higher cost raw material has increased our cost of goods for 2010 when compared to 2009. Higher volumes increased our fixed costs absorption in 2010, partially offsetting the higher needle coke cost.

In recent years, we historically purchased a majority of our requirements for petroleum coke, our principal raw material, from two plants of ConocoPhillips under supply agreements containing customary terms and conditions, including price renegotiation, dispute resolution and termination provisions. The termination provisions permitted either party to terminate the agreements at the end of a calendar year by giving the other party notice of termination by September 30 of that calendar year. During the course of our annual discussions with ConocoPhilips regarding our future needle coke requirements, including potential changes in such needs as a result of our then pending acquisition of Seadrift, as well as other provisions of the agreements which had become inapplicable due to changes in circumstances over the decade since the agreements were first established, the consensus of the parties was that the agreements should be terminated and that the parties enter into negotiations concerning future supply of needle coke. Accordingly, the agreements were terminated effective as of December 31, 2010 and we have entered into three-year supply agreements for the supply of needle coke. We believe the estimated quantities under the replacement agreements will be sufficient for our forecast raw material requirements.

Selling and administrative expenses. Acquisition costs (i.e., advisory, legal, valuation, other professional fees, etc.) associated with our acquisitions of Seadrift and C/G represented $15.2 million in 2010. We also experienced higher overhead expense due to increases in sales and marketing coverage to support internal growth initiatives during 2010 when compared to 2009. Other increases year over year related to our stock-based compensation expense which increased $3.7 million, commission expense related to increased sales of $1.6 million and the amortization expense incurred related to the customer list and trade names intangible assets acquired in the acquisitions of Seadrift and C/G of $1.4 million.

Equity in losses (earnings) of, write-down of investment in and gain recorded on acquisition of non-consolidated affiliate. We acquired an 18.9% interest in Seadrift on June 30, 2008, and subsequently acquired the remaining 81.1% of the equity interests in Seadrift on November 30, 2010. As a result of the acquisition of the remaining 81.1% of the equity interests in Seadrift, accounting guidance requires us to re-measure the book value of our previously held 18.9% equity interest at the

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acquisition date to fair value and recognize the resulting gain in our 2010 earnings. We recorded a $9.6 million non-cash gain in our 2010 earnings.

Our equity in earnings for 2010 was $4.9 million as compared to equity in losses of $2.7 million in 2009. Additionally, in June 2009, we performed an assessment of our investment for impairment and determined that the fair value of the investment was less than our carrying value and that the loss in value was other than temporary. We recorded a $52.8 million non-cash impairment to recognize this other than temporary loss in value.

Other (income) expense. Other (income) expense was income of $4.8 million in 2010, compared to an expense in 2009 of $1.9 million, due in large part to favorable currency gains of $6.2 million in 2010 compared to losses of $0.5 million in 2009.

Interest expense. Interest expense decreased in 2010 as a result of the low long term debt levels carried through 2010 when compared to the debt levels maintained throughout 2009. We expect our interest expense to increase in 2011 due to higher draws on our Revolving Facility and the amortization of the discount recorded with the issuance of the Senior Subordinated Notes.

Segment operating income. Corporate expenses are allocated to segments based on each segment s percentage of consolidated sales. The following table represents our operating income by segment for the years ended December 31, 2009 and 2010:

	For the Year ended December 31,	
	2009	**2010**
	(Dollars in thousands)	
Industrial Materials	$ 88,818	$ 140,997
Engineered Solutions	9,794	18,185
Total segment operating income	$ 98,612	$ 159,182

The percentage relationship of operating expenses to sales for Industrial Materials and Engineered Solutions is set forth in the following table:

	Operating Expenses		
	2009	**2010**	**Change**
	(Percentage of sales)		
Industrial Materials	83%	83%	0%
Engineered Solutions	92%	89%	(3%)

Segment operating costs and expenses as a percentage of sales for Industrial Materials remained consistent year over year. However, total operating costs and expenses increased $243.6 million year over year. The increase was primarily a result of volume increases (including the effect of the additional volume from the acquisitions) of $175.2 million, higher production costs of $27.8 million, unfavorable currency exchange of $9.3 million and acquisition costs incurred of $15.2 million.

Segment operating costs and expenses as a percentage of sales for Engineered Solutions decreased three percentage points to 89% in 2010 when compared to 2009. Total operating costs and expenses, however, increased $43.8 million year over year. The increase was primarily a result of increases in volume of $39.3 million which were offset by favorable currency of $1.7 million.

Provision for income taxes. The provision for income taxes was a benefit of $0.4 million on pre-tax income of $174.7 million in 2010, compared to a tax expense of $24.1 million on pre-tax income of $36.7 million in 2009. The effective tax rates were (0.2%) and 65.8% respectively. The 2009 tax rate was negatively impacted primarily by an increase in the valuation allowance of $22.8 million as a result of the impairment of our investment in Seadrift and the establishment of accruals for uncertain tax positions of $6.1 million. As a result of our 2010 acquisitions, we are now in an overall net deferred tax liability position, and therefore, we reversed the provision for valuation allowance on certain deferred tax assets in the amount of $30.3 million.

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Results of Operations for 2009 as Compared to 2008

(in thousands, except per share data and % change)

	2008	2009	Increase (Decrease)	% Change
Net sales	$ 1,190,238	$ 659,044	$ (531,194)	(45)
Cost of sales	756,802	467,939	(288,863)	(38)
Gross profit	433,436	191,105	(242,331)	(56)
Research and development	8,986	10,168	1,182	13
Selling and administrative expenses	95,757	82,325		