Small Diameter Graphite Electrodes from China

Investigation No. 731-TA-1143 (Second Review)

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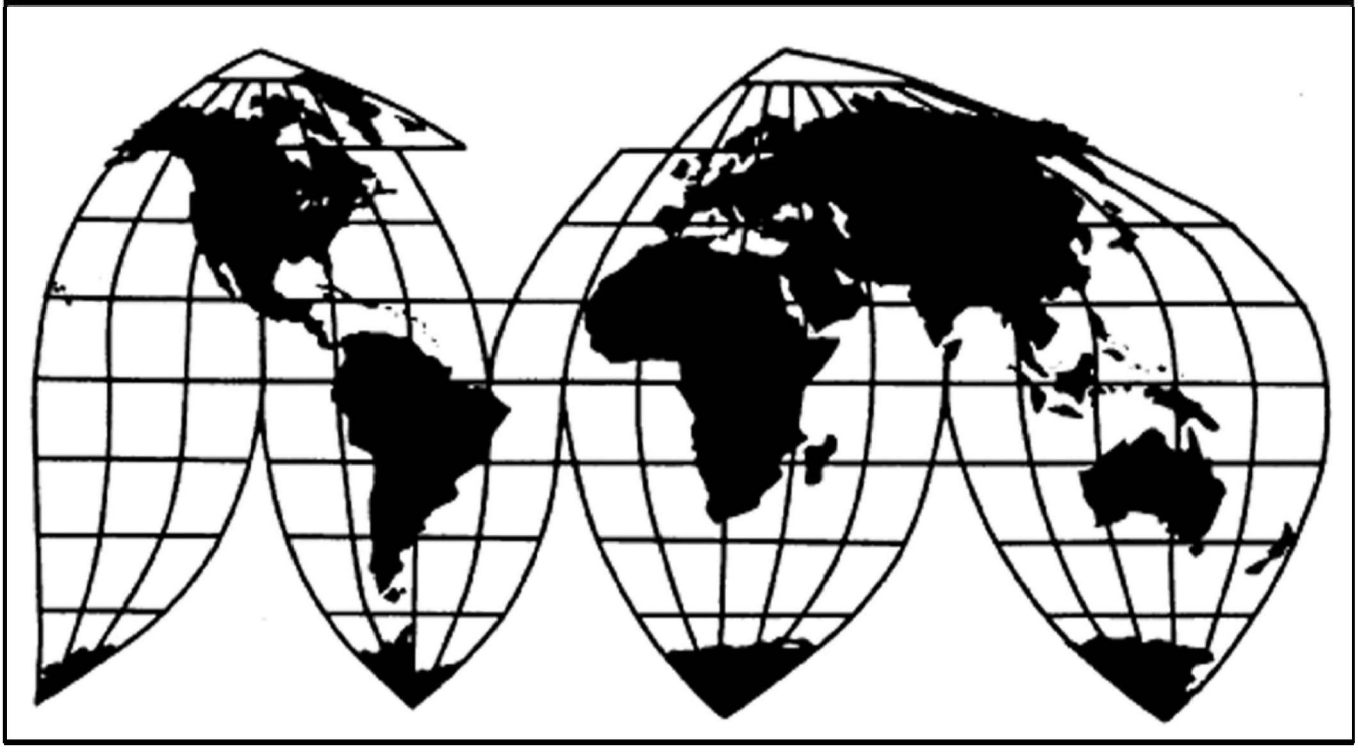
U.S. International Trade Commission



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U.S. International Trade Commission

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Address all communications to
Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

U.S. International Trade Commission

Washington, DC 20436
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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 731-TA-1143 (Second Review)

Small Diameter Graphite Electrodes from China

DETERMINATION

On the basis of the record[1] developed in the subject five-year second review, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that revocation of the antidumping duty order on small diameter graphite electrodes from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

BACKGROUND

The Commission instituted this review on May 1, 2019 (84 FR 18580) and determined on August 5, 2019 that it would conduct a full review (84 FR 43615, August 21, 2019). Notice of the scheduling of the Commission's review and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on September 23, 2019 (84 FR 51619). Subsequently, the Commission cancelled its previously-scheduled hearing following a request on behalf of the domestic interested parties, the only parties to enter an appearance in this review (85 FR 4339, January 24, 2020).

[1] The record is defined in sec. 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR 207.2(f)).

Views of the Commission

Based on the record in this five-year review, we determine under section 751(c) of the Tariff Act of 1930, as amended ("the Tariff Act"), that revocation of the antidumping duty order on small diameter graphite electrodes ("SDGE") from China would likely lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

I. Background

Original Investigation. On January 17, 2008, SGL Carbon LLC ("SGL Carbon") and Superior Graphite Company ("Superior") filed an antidumping duty petition on SDGE from China. On February 19, 2009, the Commission determined that an industry in the United States was materially injured by reason of imports of SDGE from China that the U.S. Department of Commerce ("Commerce") had determined were sold at less than fair value.[1] On February 26, 2009, Commerce published an antidumping duty order covering SDGE from China.[2]

First Review. The Commission instituted its first five-year review on January 2, 2014.[3] After conducting an expedited review, the Commission reached an affirmative determination on June 2, 2014.[4] Commerce issued a continuation of the antidumping duty order on June 23, 2014.[5]

Current Review. The Commission instituted this second five-year review on May 1, 2019.[6] Tokai Carbon GE LLC ("Tokai Carbon"), a domestic producer of SDGE, filed the sole response to the notice of institution.[7] On August 15, 2019, the Commission determined that the response to its notice of institution was adequate with respect to the domestic interested party group and inadequate with respect to the respondent interested party group. The

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[1] *Small Diameter Graphite Electrodes from China*, Inv. No. 731-TA-1143 (Final), USITC Pub. 4062 (Feb. 2009) ("*Original Determination*"); *see also Final Determination of Sales at Less Than Fair Value and Affirmative Determination of Critical Circumstances: Small Diameter Graphite Electrodes from the People's Republic of China*, 74 Fed. Reg. 2049 (Jan. 14, 2009).

[2] *Antidumping Duty Order: Small Diameter Graphite Electrodes from the People's Republic of China*, 74 Fed. Reg. 8775 (Feb. 26, 2009).

[3] *Small Diameter Graphite Electrodes From China; Institution of a Five-Year Review*, 79 Fed. Reg. 145 (Jan. 2, 2014).

[4] *Small Diameter Graphite Electrodes from China*, Inv. No. 731-TA-1143 (Review), USITC Pub. 4469 (June 2014) ("*First Review Determination*").

[5] *Small Diameter Graphite Electrodes From the People's Republic of China: Continuation of Antidumping Duty Order*, 79 Fed. Reg. 35523 (Jun. 23, 2014).

[6] *Small Diameter Graphite Electrodes From China; Institution of a Five-Year Review*, 84 Fed Reg. 18580 (May 1, 2019).

[7] Domestic Producers' Responses to the Commission's Notice of Institution. Tokai Carbon is the successor to SGL Carbon, which Tokai Carbon acquired and renamed in 2017. CR/PR at III-3

Commission nevertheless determined to conduct a full review in light of changes in the conditions of competition in the U.S. SDGE market.[8]

Tokai Carbon and GrafTech International Ltd. ("GrafTech"), domestic producers of SDGE (jointly, "domestic producers"), jointly filed prehearing and posthearing briefs and final comments. At the domestic producers' request, the Commission cancelled the hearing in this review.[9]

In this review, U.S. industry data are based on the questionnaire responses of two U.S. producers that are believed to account for all known domestic production of SDGE in 2018.[10] U.S. import data and related information are based on official import statistics and the questionnaire responses of 12 U.S. importers that are believed to account for *** percent of U.S. imports of SDGE from China, *** percent of imports from all other sources, and 70.0 percent of all imports of SDGE during 2018.[11] The Commission did not receive any responses to its questionnaires from any producers of SDGE in China.[12] Therefore, foreign industry data and related information are based on information from the original investigation, including questionnaire responses from 13 producers and exporters of SDGE in China, accounting for nearly *** percent of exports from China to the United States during 2007, and available information submitted by the domestic producers, and information gathered by Commission staff, such as Global Trade Atlas ("GTA") data and other publicly available information.[13]

II. Domestic Like Product and Industry

A. Domestic Like Product

In making its determination under section 751(c) of the Tariff Act, the Commission defines the "domestic like product" and the "industry."[14] The Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation under this subtitle."[15] The Commission's

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[8] *Small Diameter Graphite Electrodes from China; Notice of Commission Determination to Conduct a Full Five-Year Review*, 84 Fed. Reg. 43615 (Aug. 21, 2019); *see also* Explanation of Commission Determination on Adequacy, EDIS Doc. 685234 (Aug. 14, 2019).

[9] *Small Diameter Graphite Electrodes From China; Cancellation of Hearing for Second Full Five-Year Review*, 85 Fed. Reg. 4339 (Jan. 19, 2020). In *lieu* of a hearing, the domestic producers submitted answers to the Commission's written questions in its posthearing brief. Domestic Producers' Posthearing Brief, Exhibit 1 (responses to Commissioner questions).

[10] Confidential Report INV-SS-014 ("CR") at III-1, Public Report ("PR") at III-1.

[11] CR/PR at IV-1.

[12] CR/PR at I-11.

[13] *See* CR/PR at IV-12-22.

[14] 19 U.S.C. § 1677(4)(A).

[15] 19 U.S.C. § 1677(10); *see*, *e.g.*, *Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996); *Torrington Co. v. United States*, 747 F. Supp. 744, 748-49 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991); *see also* S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

practice in five-year reviews is to examine the domestic like product definition from the original investigations and consider whether the record indicates any reason to revisit the prior findings.[16]

Commerce has defined the scope of the antidumping duty order in the five-year review as follows:

> (A)ll small diameter graphite electrodes of any length, whether or not finished, of a kind used in furnaces, with a nominal or actual diameter of 400 millimeters (16 inches) or less, and whether or not attached to a graphite pin joining system or any other type of joining system or hardware. The merchandise covered by the order also includes graphite pin joining systems for small diameter graphite electrodes, of any length, whether or not finished, of a kind used in furnaces, and whether or not the graphite pin joining system is attached to, sold with, or sold separately from, the small diameter graphite electrodes. Small diameter graphite electrodes and graphite pin joining systems for small diameter graphite electrodes are most commonly used in primary low-duty melting, ladle metallurgy, and specialty furnace applications in industries including foundries, smelters, and steel refining operations. Small diameter graphite electrodes and graphite pin joining systems for small diameter graphite electrodes that are subject to the order are currently classified under the Harmonized Tariff Schedule of the United States ("HTSUS") subheadings 8545.11.0010,[8] 3801.10,[9] and 8545.11.0020.[10] The HTSUS numbers are provided for convenience and customs purposes, but the written description of the scope is dispositive.
>
> [8] The scope described in the order refers to the HTSUS subheading 8545.11.0000. We note that, starting in 2010, imports of small diameter graphite electrodes are classified in the HTSUS under subheading 8545.11.0010 and imports of large diameter graphite electrodes are classified under subheading 8545.11.0020.
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> [9] HTSUS subheading 3801.10 was added to the scope of the graphite electrodes order based on a determination in *Small Diameter Graphite Electrodes from the People's Republic of China: Affirmative Final Determination of Circumvention of the Antidumping Duty Order*, 77 Fed. Reg. 47596 (August 9, 2012). The products covered by the first circumvention determination are graphite electrodes (or graphite pin joining systems) that were: (1) produced by UK Carbon and Graphite Co., Ltd. ("UKCG") from China-manufactured artificial/synthetic graphite forms, of a size and shape (*e.g.*, blanks, rods, cylinders, billets, blocks, *etc.*), (2) which required additional machining processes (*i.e.*, tooling and

[16] *See*, *e.g.*, *Internal Combustion Industrial Forklift Trucks from Japan*, Inv. No. 731-TA-377 (Second Review), USITC Pub. 3831 at 8-9 (Dec. 2005); *Crawfish Tail Meat from China*, Inv. No. 731-TA-752 (Review), USITC Pub. 3614 at 4 (July 2003); *Steel Concrete Reinforcing Bar from Turkey*, Inv. No. 731-TA-745 (Review), USITC Pub. 3577 at 4 (Feb. 2003).

shaping) that UKCG performed in the United Kingdom ("UK"), and (3) were re-exported to the United States as UK-origin merchandise.

[10] HTSUS subheading 8545.11.0020 was added to the scope of the small diameter graphite electrodes order based on a determination in *Small Diameter Graphite Electrodes from the People's Republic of China: Affirmative Final Determination of Circumvention of the Antidumping Duty Order and Rescission of Later-Developed Merchandise Anticircumvention Inquiry*, 78 Fed. Reg. 56864 (September 16, 2013). The products covered by the second circumvention determination are graphite electrodes produced and/or exported by Jilin Carbon Import and Export Company with an actual or nominal diameter of 17 inches.[17]

SDGE are cylindrical in shape and are produced in a variety of diameters and lengths. They conduct electricity at very high currents to generate the heat necessary to melt and/or further refine steel. SDGE vary in current carrying capacity, depending on the grade of the petroleum coke – ranging from low grade anode coke to high grade needle coke – used to produce them, and are characterized as regular ("RP"), high ("HP"), or ultra high power ("UHP").[18] SDGE also vary in size, with diameters of 16 inches, 14 inches, and smaller.[19] They are used primarily in ladle metallurgy, specialty furnace applications, and primary low-duty melting.[20] Typically, electrodes are joined in columns with a threaded graphite pin joining system (also known as a pinning or connecting system). Because of the intensity of the melting process in steel production, the electrodes are continuously consumed.[21] In the original investigation, the Commission defined a single domestic like product consisting of SDGE coextensive with the scope of the investigation. The Commission considered and rejected

[17] *Small Diameter Graphite Electrodes From the People's Republic of China: Final Results of Expedited Second Sunset Review of the Antidumping Duty Order*, 84 Fed. Reg. 44852 (Aug. 27, 2019), and accompanying Issues and Decision Memorandum, EDIS Doc., 3882496-01 at 2.

As indicated in footnotes 9 and 10 to its scope definition, replicated above, Commerce has issued two anticircumvention rulings since the original antidumping duty order was issued. In the first, Commerce found that electrodes finished in the United Kingdom by UKCG from Chinese-origin artificial graphite/unfinished SDGE components and sold in the United States circumvented the antidumping duty order. *See* 77 Fed. Reg. 47596. In the second ruling, Commerce concluded that imports from China of certain graphite electrodes, produced and/or exported by Jilin Carbon, with a diameter of 17 inches, and otherwise meeting the description of in-scope merchandise, "constitute merchandise altered in form or appearance in such minor respects that it is properly subject to the Order." *See* 78 Fed. Reg. 56864.

[18] CR/PR at I-16, I-20.

[19] CR/PR at I-19.

[20] CR/PR at I-16.

[21] CR/PR at I-18.

respondents' request to define the domestic like product to include large diameter graphite electrodes ("LDGE") that were not within the scope definition.[22]

In the expedited first five-year review, the Commission determined that the record did not indicate that there had been any significant changes in the characteristics or uses of SDGE since the original investigation and defined a single domestic like product corresponding to the scope of the order.[23]

In this full second five-year review, the domestic producers agree with the Commission's determination of the domestic like product from the prior proceedings.[24] There is no information on the record indicating that there have been any significant changes in the physical characteristics or uses of SDGE since the prior proceedings.[25] Accordingly, and in the absence of contrary argument, we again define a single domestic like product consisting of all domestically produced SDGE corresponding to the scope of the review.

B. Domestic Industry

Section 771(4)(A) of the Tariff Act defines the relevant industry as the domestic "producers as a whole of a domestic like product, or those producers whose collective output

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[22] *Original Determination*, USITC Pub. 4062 at 9-10. The Commission found the issue to be a close one. It recognized that there were a number of ways in which SDGE and LDGE might be viewed as forming a continuum, including that price, current carrying capacity, and premium needle coke content all tended to increase with the size of the electrode, and that electrodes of adjacent sizes were most comparable with respect to these attributes. The Commission concluded, however, that, on balance, the record supported limiting the domestic like product to SDGE. It found that the features of graphite electrodes established a clear dividing line between SDGE and LDGE at 16 inches in diameter. First, there was very little overlap in end uses. SDGE were used generally in foundry, specialty furnace applications, and steel mill ladle applications, whereas the great majority of LDGE were used for primary melting of steel scrap in minimill electric arc furnaces. Second, the Commission found very limited overlap in manufacturing facilities and equipment used to produce SDGE and LDGE: of the four domestic producers of graphite electrodes during the original investigation, during the period of investigation only one, SGL Carbon, was able to produce both products on the same equipment using the same employees. Third, although interchangeability of all graphite electrodes was generally limited to adjacent diameter sizes, the Commission found that SDGE could not be substituted for LDGE in heavy melting applications due to coke content and other physical characteristics. Finally, the Commission found that purchasers did not use SDGE and LDGE for the same applications, often purchasing them in separate transactions, and the level of technical support and service for SDGE and LDGE varied. *Id*.

[23] *First Review Determination*, USITC Pub. 4469 at 5-6.

[24] Domestic Producers' Responses to the Notice of Institution at 21; Domestic Producers' Prehearing Brief at 4.

[25] *See generally* CR/PR at I-16-24. The record in this review indicates that there is a greater overlap in manufacturing facilities between SDGE and LDGE than was the case in the prior proceedings, as *** domestic producers of SDGE also produce LDGE on the same equipment. *See* CR/PR at III-11 and Table III-6. However, because the record does not indicate any other changes to the characteristics or uses of the product since the prior proceedings, and in the absence of contrary argument, we have determined not to revisit our like product analysis.

of a domestic like product constitutes a major proportion of the total domestic production of the product."[26] In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

In the original investigation, the Commission defined the domestic industry to consist of all domestic producers of SDGE and did not identify any domestic industry issues.[27] In the first five-year review, the Commission again did not identify any domestic industry or related party issues. Accordingly, the Commission defined the domestic industry as consisting of all domestic producers of SDGE.[28]

In this full second five-year review, the domestic producers state that the Commission should continue to define the domestic industry as comprising of all U.S. producers of SDGE.[29] There are no related party issues in the current review.[30] Accordingly, we define the domestic industry to consist of all domestic producers of SDGE.

III. Revocation of the Antidumping Order Would Likely Lead to Continuation or Recurrence of Material Injury Within a Reasonably Foreseeable Time

A. Legal Standards

In a five-year review conducted under section 751(c) of the Tariff Act, Commerce will revoke an antidumping or countervailing duty order unless: (1) it makes a determination that dumping or subsidization is likely to continue or recur and (2) the Commission makes a determination that revocation of the antidumping or countervailing duty order "would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time."[31] The Uruguay Round Agreements Act Statement of Administrative Action ("SAA") states that "under the likelihood standard, the Commission will engage in a counterfactual analysis; it must decide the likely impact in the reasonably foreseeable future of an important change in the status quo – the revocation or termination of a proceeding and the elimination of its restraining effects on volumes and prices of imports."[32] Thus, the likelihood standard is prospective in

[26] 19 U.S.C. § 1677(4)(A). The definitions in 19 U.S.C. § 1677 are applicable to the entire subtitle containing the antidumping and countervailing duty laws, including 19 U.S.C. §§ 1675 and 1675a. *See* 19 U.S.C. § 1677.

[27] *Original Determination*, USITC Pub. 4062 at 10.

[28] *First Review Determination*, USITC Pub. 4469 at 6.

[29] Domestic Producers' Prehearing Brief at 5.

[30] CR/PR at I-26 and Table I-7. The record indicates that neither domestic producer imports subject merchandise or is related to an importer and exporter of subject merchandise.

[31] 19 U.S.C. § 1675a(a).

[32] H.R. Doc. 103-316, Vol. I at 883-84 (1994). The SAA states that "{t}he likelihood of injury standard applies regardless of the nature of the Commission's original determination (material injury, threat of material injury, or material retardation of an industry). Likewise, the standard applies to suspended investigations that were never completed." *Id*. at 883.

nature.[33] The U.S. Court of International Trade has found that "likely," as used in the five-year review provisions of the Act, means "probable," and the Commission applies that standard in five-year reviews.[34]

The statute states that "the Commission shall consider that the effects of revocation or termination may not be imminent, but may manifest themselves only over a longer period of time."[35] According to the SAA, a "'reasonably foreseeable time' will vary from case-to-case, but normally will exceed the 'imminent' timeframe applicable in a threat of injury analysis in original investigations."[36]

Although the standard in a five-year review is not the same as the standard applied in an original investigation, it contains some of the same fundamental elements. The statute provides that the Commission is to "consider the likely volume, price effect, and impact of imports of the subject merchandise on the industry if the orders are revoked or the suspended investigation is terminated."[37] It directs the Commission to take into account its prior injury determination, whether any improvement in the state of the industry is related to the order or the suspension agreement under review, whether the industry is vulnerable to material injury if an order is revoked or a suspension agreement is terminated, and any findings by Commerce regarding duty absorption pursuant to 19 U.S.C. § 1675(a)(4).[38] The statute further provides

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[33] While the SAA states that "a separate determination regarding current material injury is not necessary," it indicates that "the Commission may consider relevant factors such as current and likely continued depressed shipment levels and current and likely continued {sic} prices for the domestic like product in the U.S. market in making its determination of the likelihood of continuation or recurrence of material injury if the order is revoked." SAA at 884.

[34] *See NMB Singapore Ltd. v. United States*, 288 F. Supp. 2d 1306, 1352 (Ct. Int'l Trade 2003) ("'likely' means probable within the context of 19 U.S.C. § 1675(c) and 19 U.S.C. § 1675a(a)"), *aff'd mem.*, 140 Fed. Appx. 268 (Fed. Cir. 2005); *Nippon Steel Corp. v. United States*, 26 CIT 1416, 1419 (2002) (same); *Usinor Industeel, S.A. v. United States*, 26 CIT 1402, 1404 nn.3, 6 (2002) ("more likely than not" standard is "consistent with the court's opinion;" "the court has not interpreted 'likely' to imply any particular degree of 'certainty'"); *Indorama Chemicals (Thailand) Ltd. v. United States*, 26 CIT 1059, 1070 (2002) ("standard is based on a likelihood of continuation or recurrence of injury, not a certainty"); *Usinor v. United States*, 26 CIT 767, 794 (2002) ("'likely' is tantamount to 'probable,' not merely 'possible'").

[35] 19 U.S.C. § 1675a(a)(5).

[36] SAA at 887. Among the factors that the Commission should consider in this regard are "the fungibility or differentiation within the product in question, the level of substitutability between the imported and domestic products, the channels of distribution used, the methods of contracting (such as spot sales or long-term contracts), and lead times for delivery of goods, as well as other factors that may only manifest themselves in the longer term, such as planned investment and the shifting of production facilities." *Id*.

[37] 19 U.S.C. § 1675a(a)(1).

[38] 19 U.S.C. § 1675a(a)(1). Commerce has not made duty absorption findings on the subject merchandise. CR/PR at I-10.

that the presence or absence of any factor that the Commission is required to consider shall not necessarily give decisive guidance with respect to the Commission's determination.[39]

In evaluating the likely volume of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether the likely volume of imports would be significant either in absolute terms or relative to production or consumption in the United States.[40] In doing so, the Commission must consider "all relevant economic factors," including four enumerated factors: (1) any likely increase in production capacity or existing unused production capacity in the exporting country; (2) existing inventories of the subject merchandise, or likely increases in inventories; (3) the existence of barriers to the importation of the subject merchandise into countries other than the United States; and (4) the potential for product shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products.[41]

In evaluating the likely price effects of subject imports if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether there is likely to be significant underselling by the subject imports as compared to the domestic like product and whether the subject imports are likely to enter the United States at prices that otherwise would have a significant depressing or suppressing effect on the price of the domestic like product.[42]

In evaluating the likely impact of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider all relevant economic factors that are likely to have a bearing on the state of the industry in the United States, including but not limited to the following: (1) likely declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity; (2) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment; and (3) likely negative effects on the existing development and production efforts of the industry, including efforts to develop a derivative or more advanced version of the domestic like product.[43] All relevant economic factors are to be considered within the context of the business cycle and the conditions of competition that are distinctive to the industry. As instructed by the statute, we have considered the extent to which any improvement in the state of the domestic industry is related to the order under review and whether the industry is vulnerable to material injury upon revocation.[44]

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[39] 19 U.S.C. § 1675a(a)(5). Although the Commission must consider all factors, no one factor is necessarily dispositive. SAA at 886.

[40] 19 U.S.C. § 1675a(a)(2).

[41] 19 U.S.C. § 1675a(a)(2)(A-D).

[42] *See* 19 U.S.C. § 1675a(a)(3). The SAA states that "{c}onsistent with its practice in investigations, in considering the likely price effects of imports in the event of revocation and termination, the Commission may rely on circumstantial, as well as direct, evidence of the adverse effects of unfairly traded imports on domestic prices." SAA at 886.

[43] 19 U.S.C. § 1675a(a)(4).

[44] The SAA states that in assessing whether the domestic industry is vulnerable to injury if the order is revoked, the Commission "considers, in addition to imports, other factors that may be

B. Conditions of Competition and the Business Cycle

In evaluating the likely impact of the subject imports on the domestic industry if an order is revoked, the statute directs the Commission to consider all relevant economic factors "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[45] The following conditions of competition inform our determination.

1. Demand Conditions

a. Original Investigation and First Five-Year Review

In the original investigation, the Commission observed that demand for SDGE is largely determined by demand for steel. The Commission characterized the period of investigation as mostly "a boom period for domestic steel production."[46] Apparent U.S. consumption rose from *** metric tons in 2005 to *** metric tons in 2006, and then declined to *** metric tons in 2007, an increase from the 2005 level.[47]

In the first five-year review, the Commission found that demand for SDGE continued to be driven by demand for steel. Domestic producers reported that U.S. steel production dropped more than 40.7 percent between 2007 and 2009, and, although it increased after 2009, had not fully recovered to pre-recession levels by 2013.[48] Apparent U.S. consumption of SDGE was *** metric tons in 2013.[49]

b. Current Review

In this review, demand for SDGE continues to be driven by demand for steel.[50] Steel production declined in early 2014 to late 2015, and then grew (with some fluctuations) from late 2015 to the end of 2019.[51] Effective March 23, 2018, steel mill products – including articles produced using processes incorporating SDGE – were subject to additional import duties under Section 232 of the Trade Act of 1962, as amended ("section 232 tariffs").[52] While most market participants described section 232 tariffs as increasing U.S. demand for SDGE, some market

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contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they may also demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports." SAA at 885.

[45] 19 U.S.C. § 1675a(a)(4).

[46] *Original Determination*, USITC Pub. 4062 at 14.

[47] *Original Determination*, USITC Pub. 4062 at 14; Confidential Original Determination, EDIS Doc. 680170 at 19.

[48] *First Review Determination*, USITC Pub. 4469 at 9.

[49] *First Review Determination*, USITC Pub. 4469 at 9; Confidential First Review Determination, EDIS Doc. 680171 at 12.

[50] CR/PR at II-11-12.

[51] CR/PR at II-12.

[52] CR/PR at II-2. *See* 19 U.S.C. § 1862; *Adjusting Import of Steel Into the United States*, 83 Fed. Reg. 11625 (Mar. 15, 2018).

participants reported demand was increasing simultaneously for other reasons.[53] Market participants reported mixed views on the demand for domestically produced steel and SDGE over the period of review.[54]

Apparent U.S. consumption of SDGE declined from *** metric tons in 2014 to *** metric tons in 2015 and *** metric tons in 2016, and then rose to *** metric tons in 2017 and a period peak of *** metric tons in 2018; it was *** metric tons in interim 2018 and lower, at *** metric tons, in interim 2019.[55] Most market participants reported that they expect U.S. demand to remain unchanged or fluctuate over the next two years.[56]

2. Supply Conditions

a. Original Investigation and First Five-Year Review

During the original investigation and the first five-year year review, the U.S. SDGE market was supplied by the domestic industry, subject imports, and nonsubject imports. The domestic industry in the original investigation consisted of petitioners SGL Carbon and Superior.[57] In the first five-year review, a third domestic producer, GrafTech, entered the SDGE market.[58]

In the original investigation, the domestic industry's capacity to produce SDGE remained steady in 2005 and 2006 before declining in 2007. Domestic producers reported a limited supply of needle coke globally and that their raw material costs increased by *** percent on a per-unit basis from 2005 to 2007. The domestic industry's share of apparent consumption decreased from *** percent in 2005 to *** percent in 2007.[59] In the first five-year review, the domestic industry supplied a larger share of apparent U.S. consumption in 2013, *** percent, than in 2007.[60]

In the original investigation, subject imports' market share increased from *** percent in 2005 to *** percent in 2007, and nonsubject imports' market share rose from *** percent in 2005 to *** percent in 2007.[61] In the first five-year review, subject imports' share in 2013 was

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[53] CR/PR at II-2. Market participants described the section 232 tariffs as having varying effects on prices for SDGE in the U.S. market. *Id*.

[54] CR/PR at II-13 and Table II-4. *** purchasers reported increasing demand, one indicated no change, two indicated decreased demand, and one indicated fluctuating demand for domestically produced steel. *** reported fluctuating U.S. demand for SDGE, while most importers reported that demand had not changed and most purchasers reported that demand had increased. *Id*.

[55] CR/PR at Table I-9.

[56] CR/PR at II-14.

[57] *Original Determination*, USITC Pub. 4062 at 16.

[58] *First Review Determination*, USITC Pub. 4469 at 10.

[59] *Original Determination*, USITC Pub. 4062 at 14-15; Confidential Original Determination at 20-21.

[60] *First Review Determination*, USITC Pub. 4469 at 10; Confidential First Review Determination at 13.

[61] *Original Determination*, USITC Pub. 4062 at 14-15; Confidential Original Determination at 20-21.

*** percent, lower than the 2007 level. Nonsubject imports supplied the largest share of the U.S. market in 2013, with *** percent of apparent U.S. consumption.[62]

b. Current Review

During this period of review, the U.S. SDGE industry was again supplied by the domestic industry, subject imports, and nonsubject sources. Although the domestic industry remained highly concentrated, with only two producers, there have been a number of changes to the composition of the domestic industry since the last review.[63] Original petitioner Superior ceased production in 2016,[64] and the other petitioner in the original investigation, SGL Carbon, was acquired by Tokai Carbon in 2017.[65] GrafTech, which entered the SDGE market during the first review period, ***. In the first quarter of 2018, GrafTech's St. Marys, Pennsylvania facility began graphitizing a limited number of SDGE sourced from its facility in Monterrey, Mexico.[66]

The domestic industry produced SDGE in *** diameter sizes and *** power types, ***.[67] The domestic industry's U.S. shipments were focused primarily on ladle applications, and also included AC EAF applications.[68]

The domestic industry's share of apparent U.S. consumption increased from *** percent in 2014 to a period peak of *** percent in 2015, declined to a period low of *** percent in 2016, and then increased to *** percent in 2017 and *** percent in 2017; it was *** percent in interim 2018 and lower, at *** percent, in interim 2019.[69]

U.S. shipments of subject imports included SDGE 14-16 inches in diameter and smaller and were mainly HP power type, with some shipments of UHP.[70] Subject imports were used for ladle and AC EAF applications.[71] Subject imports had a fluctuating presence in the U.S. market, declining from a period peak of *** percent of apparent U.S. consumption in 2014, to a period low of *** percent in 2015, then increasing each year from *** percent in 2016, to *** percent in 2017, to *** percent in 2018; subject import market penetration was *** percent in interim 2018 and lower, at *** percent, in interim 2019.[72]

Nonsubject imports accounted for the largest share of apparent U.S. consumption throughout the period of review. Nonsubject import market penetration increased from a

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[62] First Review Determination, USITC Pub. 4469 at 10; Confidential First Review Determination at 13.

[63] Each domestic producer anticipates changes in operations. *** stated that it anticipates producing a *** SDGE, *** anticipates ***, and ***. Domestic Producers' Prehearing Brief at 9; Domestic Producers' Posthearing Brief at 27; CR/PR at III-7.

[64] CR/PR at III-6.

[65] CR/PR at III-3.

[66] CR/PR at III-4-5.

[67] CR/PR at Table III-8.

[68] CR/PR at Table III-9.

[69] CR/PR at Tables I-2, I-9.

[70] CR/PR at Table IV-4.

[71] CR/PR at Table IV-5.

[72] CR/PR at Tables I-2, I-9.

period low of *** percent in 2014 to *** percent in 2015, and a period high of *** percent in 2016, then declined to *** percent in 2017 and *** percent in 2018; it was *** percent in interim 2018 and higher, at *** percent, in interim 2019.[73]

The product range for nonsubject imports was broad, encompassing SDGE of all specified ranges of sizes, power, and applications.[74] Domestic producers imported substantial quantities of nonsubject imports during the period of review, with domestic producers importing a total of *** percent of all nonsubject imports in 2018.[75] Mexico and India were the largest sources of nonsubject imports in the U.S. market in 2018[76]; GrafTech was the *** importer of nonsubject imports from Mexico.[77] Additionally, Tokai Carbon imported SDGE from Japan during the period of review, but stated that it intends to move some production and imports from Japan to the United States.[78]

3. Substitutability and Other Conditions

a. Original Investigation and First Five-Year Review

The Commission found in the original investigation that the domestic like product and subject imports were at least moderately interchangeable and that price was an important consideration in purchasing decisions.[79] In the first five-year review, the record contained no new information that suggested any changes in substitutability between the domestic like product and subject imports or in the importance of price in purchasing decisions.[80]

b. Current Review

The record in this review indicates that there is a moderately high degree of substitutability between the domestic like product and subject imports from China.[81] The vast majority of market participants reported that the domestic like product and subject imports are always or frequently interchangeable.[82] Additionally, most purchasers reported that SDGE

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[73] CR/PR at Tables I-2, I-9.

[74] CR/PR at Tables IV-4, IV-5.

[75] CR/PR at Tables III-10, IV-2. GrafTech and Tokai Carbon imported a total of *** metric tons of SDGE from nonsubject sources in 2018. Imports of SDGE from all nonsubject sources totaled 21,508 metric tons in 2018. *Id*.

[76] CR/PR at Table IV-2.

[77] CR/PR at Tables III-10, IV-2. GrafTech reported importing *** metric tons of SDGE from Mexico in 2016, *** metric tons in 2017, and *** metric tons in 2018; while total imports of SDGE from Mexico based on official import statistics were 4,315 metric tons in 2016, 4,892 metric tons in 2017, and 7,498 metric tons in 2018. *Id*.

[78] Domestic Producers' Posthearing Brief, Exhibit 1 at 27; *see also id*. at 33, 47, 53, 55.

[79] *Original Determination*, USITC Pub. 4062 at 15, 17; Confidential Original Determination at 21.

[80] *First Review Determination*, USITC Pub. 4469 at 10-11, 19.

[81] CR/PR at II-15.

[82] CR/PR at Table II-10.

made in the United States and China always or usually meet minimum quality specifications.[83] Majorities or pluralities of purchasers reported that domestically produced SDGE were comparable in ten out of 15 factors, including quality meets industry standards, availability, and product consistency.[84]

The record in this review also indicates that price remains an important factor in purchasing decisions. The three most frequently cited top-three purchasing factors were quality, price, and availability.[85] In addition, nine out of ten purchasers identified price as a very important purchasing factor, following only availability that was the most frequently identified.[86]

SDGE are made from a range of petroleum coke products, with needle coke being the most expensive type. Due to increased demand and limited supply, global prices for needle coke increased substantially in 2017 and 2018. Petroleum needle coke spot prices ranged from $500 per metric ton in 2016 to $4,500 per metric ton in May 2019.[87]

Effective September 24, 2018, SDGE from China entering under HTS subheadings 3801.10.50 and 8545.11.00 were included in the third tranche of articles subject to the additional 10 percent duty under Section 301 of the Trade Act of 1974, as amended ("section 301 tariffs").[88] The President increased the *ad valorem* duty to 25 percent on SDGE from China entering under these two HTS subheadings, effective May 10, 2019.[89] Market participants' reports varied regarding the effect, if any, of the section 301 tariffs on the SDGE market.[90]

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[83] CR/PR at Table II-11.

[84] CR/PR at Table II-9. The record also indicates that nonsubject imports are generally substitutable with the domestic like product and subject imports. The great majority of market participants reported that nonsubject imports were always or frequently interchangeable with both subject imports and the domestic like product. CR/PR at Table II-10. Majorities or pluralities of responding purchasers reported that nonsubject imports were comparable with the domestic like product in 12 of 15 purchasing factors and were comparable to the subject imports in 14 of 15 purchasing factors. CR/PR at Table II-9.

[85] CR/PR at Table II-6.

[86] CR/PR at Table II-7.

[87] CR/PR at V-1-2. Petroleum needle coke spot prices decreased from approximately $1,000/metric ton in 2017 to $500/metric ton in 2016. Prices increased in 2017 and were approximately $2,500/metric ton in 2018, $3,500/metric ton in January to March 2019, and $4,500/metric ton in May 2019. *Id*.

[88] CR/PR at I-15. *See* 18 U.S.C. § 2411; *Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 Fed. Reg. 47974 (Sep. 21, 2018).

[89] *Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 84 Fed. Reg. 20459 (May 9, 2019).

[90] CR/PR at II-3. *** U.S. producers/importers, five additional importers, and two purchasers indicated that the section 301 tariffs had an impact on the U.S. SDGE market. Three purchasers and two importers indicated that it did not have an effect; four purchasers and three importers reported that they did not know.

C. Likely Volume of Subject Imports

1. The Original Investigation and First Five-Year Review

In the original investigation, the volume of subject imports, which was already sizeable at the beginning of the period of investigation, increased by 36.7 percent from 2005 to 2007, rising from 10,082 metric tons to 13,784 metric tons in that period. The market share of subject imports rose from *** percent in 2005 to *** percent in 2007. The ratio of subject imports to U.S. production rose *** from *** percent in 2005 to *** percent in 2007.[91]

The Commission found that subject imports captured market share from the domestic industry notwithstanding the increase in demand from 2005 to 2007. The domestic industry's market share, by quantity, declined from *** percent in 2005 to *** percent in 2007. The Commission found that the volume of subject imports and the increase in that volume was significant, both in absolute terms and relative to consumption and production in the United States.[92]

In the expedited first five-year review, the Commission found that the antidumping duty order had a disciplining effect on the volume of subject imports, which was substantially lower in 2013 than in 2007. Available data indicated that China was the world's largest producer and exporter of all graphite electrodes, and that the graphite electrode industry in China likely had excess capacity that exceeded apparent U.S. consumption of SDGE. Additionally, the United States remained an attractive market to subject producers in China in light of their continued participation in the market and attempts to circumvent the order.[93] Accordingly, the Commission found that subject producers in China were likely, absent the restraining effects of the order, to direct substantial and increasing volumes of SDGE to the U.S. market. It also found that the likely volume of subject imports both in absolute terms and relative to production and consumption in the United States would be significant if the order were revoked.[94]

2. The Current Review

Subject imports' presence in the U.S. market fluctuated throughout the period of review. The quantity of subject imports decreased from 4,205 metric tons in 2014 to 60 metric tons in 2015, and increased to 484 metric tons 2016, 1,198 metric tons in 2017, and 2,899 metric tons in 2018; it was 2,730 metric tons in interim 2018 and 852 metric tons in 2019. During the years and interim periods encompassed by the period of review subject imports'

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[91] *Original Determination*, USITC Pub. 4062 at 16; Confidential Original Determination at 22-23. During the January-September interim 2008 period, subject import volume was slightly lower, but market share was higher than in interim 2007. *Id*.

[92] *Original Determination*, USITC Pub. 4062 at 16.

[93] *First Review Determination*, USITC Pub. 4469 at 11. *See* section II.A. above for a discussion of Commerce's anticircumvention rulings.

[94] *First Review Determination*, USITC Pub. 4469 at 11-12; Confidential First Review Determination at 15-17.

share of apparent U.S. consumption ranged from *** percent in 2015 to *** percent in 2014.[95] As discussed in section IV.B.2.b. above, even peak subject import penetration during the period of review was well below the levels observed during the original investigation.

The Commission issued 100 questionnaires to foreign producers and exporters believed to produce and/or export subject merchandise, and received no responses.[96] Therefore, the record contains limited data concerning the SDGE industry in China, and we rely on publicly available data for the period of review concerning production of graphite electrodes and exports of carbon electrodes, categories that include both subject and out-of-scope merchandise.

Publicly available production data indicate that Chinese graphite electrode production increased from 507,000 metric tons in 2016 to 700,000 metric tons in 2018. Chinese producers' production capacity decreased from 1 million metric tons in 2014 and 2015 to 800,000 metric tons in 2016, and 700,000 metric tons in 2017, and was reported to be 1.2 million metric tons in 2018.[97] Production capacity is projected to increase to 1.5 million metric tons in 2020.[98] In 2018, the Chinese graphite electrode industry had more than 500,000 metric tons of excess capacity, significantly exceeding the size of that year's apparent U.S. consumption of SDGE, which was *** metric tons. Production capacity of graphite electrodes in China is projected to reach 1.5 million metric tons in 2020.[99] Moreover, China is substantially expanding production of needle coke, a primary input into graphite electrode production.[100]

Subject producers in China are highly export oriented. China was the largest global exporter of carbon electrodes, in 2017 and 2018, and was the second largest source in 2016.[101] China exported substantial quantities of carbon electrodes to markets in Asia, Europe, and North America throughout the period of review.[102]

The United States remains an attractive market to the subject industry in China. As discussed above, notwithstanding the restraining effects of the antidumping duty order, subject imports maintained a presence in the U.S. market throughout the period of review. Further, even with the order in place, there was an overlap between the domestic like product and subject imports in *** applications.[103] Most responding market participants thought U.S. prices

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[95] CR/PR at Tables I-2 and I-9.

[96] CR/PR at IV-12.

[97] Chinese production and capacity data for graphite electrodes, irrespective of diameter, were collected from Massif Capital's data for 2014-2017. For 2018, capacity and production data are from official Chinese statistics, as reported by Steel 360. CR/PR at Tables IV-7, IV-9.

[98] Projected Chinese production capacity for 2020 was collected from Graphite India's data. CR/PR at IV-15.

[99] CR/PR at IV-15.

[100] China's needle coke production capacity was 280,000 metric tons in 2019 and is expected to increase by 1.2 million metric tons between 2019 and 2020. CR/PR at IV-19-20.

[101] CR/PR at Table IV-10.

[102] CR/PR at Table IV-8. Exports of carbon electrodes from China totaled 157,167 metric tons in 2016, 237,326 metric tons in 2017, and 333,232 metric tons in 2018. *Id*.

[103] CR/PR at Tables III-8-9, IV-4-5.

were higher than those in other markets.[104] Available data on carbon electrodes indicates that the United States was China's second largest export market during 2018.[105]

We believe that the United States will continue to be an attractive export market for subject imports should the antidumping duty order under consideration in this review be revoked. Even with section 301 tariffs in place, subject imports have continued to enter the U.S. market.[106] Moreover, a majority of importers did not report that section 301 tariffs affected the availability of SDGE from China.[107] Notwithstanding the section 301 tariffs in effect, *** and *** predicted that if the order were revoked, there would be increased availability of SDGE in the U.S. market.[108]

Accordingly, based on the subject producers' behavior during the prior proceedings, subject imports' continued presence in the U.S. market, and information available regarding the subject producers' substantial and growing production capacity, excess capacity, and export orientation, and the attractiveness of the U.S. market, we find that the likely volume of subject imports, both in absolute terms and relative to consumption in the United States, will likely be significant if the order were revoked.[109]

D. Likely Price Effects

1. The Original Investigation and First Five-Year Review

In the original investigation, the Commission found that price was an important factor in purchasing decisions. It indicated that domestic producers and a majority of importers reported that non-price differences between subject imports and the domestic like product were only *** in purchasing decisions. While a sizeable minority of responding importers reported that non-price differences were always or frequently an important factor in purchasing decisions, and almost all purchasers indicated that reliability, availability, product consistency, and whether the quality meets industry standards were among the most important factors in purchasing decisions in addition to price, few market participants could

[104] Six of eight responding producers and exporters stated such views. CR/PR at V-12.

[105] CR/PR at Table IV-8. The United States was the seventh and third largest export market for graphite electrodes in 2016 and 2017, respectively. *Id*. A major Chinese graphite electrode producer, whose production includes both SDGE and out-of-scope LDGE, exports most of its production, and identifies the United States as its second-largest export market. CR/PR at IV-20.

[106] CR/PR at Tables I-9 and E-1.

[107] CR/PR at II-3.

[108] CR/PR at II-9.

[109] We also examined several other factors in our analysis of likely subject import volume. The U.S. importers held no inventories of subject merchandise. CR/PR at Table IV-6. There are no antidumping or countervailing duty orders on SDGE currently in effect in other markets. CR/PR at IV-22. Due to the lack of questionnaire responses from any foreign producers, the record in this review does not contain any information about current inventories in China of the subject merchandise or of subject producers' current ability to shift production between products.

identify instances when Chinese imports failed to satisfy quality and availability requirements.[110]

The Commission collected quarterly pricing data for five types of SDGE for sales to both end users and distributors. The pricing data showed pervasive underselling by subject imports, with subject imports underselling the domestic like product in 54 of 60 comparisons by margins ranging from 2.3 percent to 36.2 percent. The Commission found that the effects of underselling on the domestic industry differed with respect to the two domestic producers. Superior, which competed head-to-head with subject imports for sales across most SDGE sizes, submitted evidence of substantial lost sales to low-priced imports. SGL Carbon, on the other hand, rather than lowering its prices to meet subject import prices and maintain customers for 10- and 12-inch diameter SDGE, made a business decision to cede its market share for those products and to focus only on customers for which the quality of subject imports was not yet acceptable.[111]

The Commission found that the effects of underselling were in the volumes of lost domestic sales rather than in the effects on domestic prices. Available data did not indicate that subject imports had significant depressing effects on domestic prices, as domestic prices for all five products for which data were collected rose over the period of investigation, reflecting strong demand for SDGE and rising raw material prices.[112] The Commission also found that available data did not support a finding that subject imports suppressed domestic prices to a significant degree over the full period of investigation.[113]

The Commission found that there was significant underselling by subject imports and that this underselling led to lost sales in 2006 and 2007. This underselling allowed subject imports to gain market share at the expense of the domestic industry, and the domestic industry's U.S. shipments to decline throughout the period of investigation, despite generally rising demand. The Commission therefore determined that subject imports had significant price effects on the domestic industry.[114]

In the first five-year review, the Commission found that subject imports from China were at least moderately interchangeable with the domestic like product and that price was an important factor in purchasing decisions. The record did not contain current pricing comparisons due to the failure of respondent interested parties to participate and the expedited nature of the review. The Commission found that the significant underselling

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[110] *Original Determination*, USITC Pub. 4062 at 17; Confidential Original Determination at 23-24.

[111] *Original Determination*, USITC Pub. 4062 at 17.

[112] *Original Determination*, USITC Pub. 4062 at 17-18. The Commission did observe, however, that for one of the domestically produced pricing products, which constituted *** percent of the quantity of product for which it had received pricing data and which had the largest margins of underselling by subject imports, the increase in prices was *** than for the other products. *Id*; Confidential Original Determination at 25.

[113] *Original Determination*, USITC Pub. 4062 at 18. The Commission found, however, that there was evidence that low-priced subject imports had adversely affected domestic producers' prices for a portion of the period. Specifically, the ratio of cost of goods sold ("COGS") to net sales rose from *** percent in 2006 to *** percent in 2007. *Id*. at 18-19; Confidential Original Determination at 25-26.

[114] *Original Determination*, USITC Pub. 4062 at 19.

observed during the original investigation would likely recur if the antidumping duty order were revoked. Accordingly, the Commission concluded that this would likely cause the domestic industry to lose sales and market share, as was the case in the original investigation.[115]

2. The Current Review

The Commission requested that U.S. producers and importers provide quarterly pricing data for three SDGE products.[116] *** provided usable pricing data.[117] No importers provided data, ***.[118] After receipt of the questionnaires, Commission staff contacted U.S. producers and the largest importer from China and requested data on sales quantities for 14- to 16-inch HP SDGE, as ***. *** provided any data.[119] Therefore, the record does not contain product-specific price comparisons for SDGE for the period of review.

As described above, we find that there is a moderately high degree of substitutability between subject imports from China and the domestic like product, and price is an important purchasing factor. The information available in the record supports a conclusion that, should the order be revoked, the underselling observed in the original investigation would likely recur. In the questionnaire responses, half of responding purchasers indicated that, even with the order in place, subject imports are lower priced than the domestic like product.[120] Several importers and purchasers reported that the likely impact of revocation of the order would be lower or more competitive pricing.[121]

Accordingly, given the likely significant volume of subject imports, the moderately high degree of substitutability, and the importance of price, we find that the significant underselling observed during the original investigation would likely recur if the antidumping duty order were revoked. This in turn would likely cause the domestic producers to lose sales and market share.

In light of these considerations, we conclude that subject imports would likely have significant price effects upon revocation of the order.

E. Likely Impact

1. The Original Investigation and First Five-Year Review

In the original investigation, the Commission found that the domestic industry's performance indicators showed declining overall trends despite strong demand conditions, and

[115] *First Review Determination*, USITC Pub. 4469 at 14.

[116] The three pricing products included a 14-inch RP product, a 14-inch UHP product, and a 16-inch UHP product. CR/PR at V-6.

[117] The reported pricing data accounted for *** percent of U.S. producers' shipments of the domestic like product in 2018. CR/PR at V-7.

[118] CR/PR at V-7.

[119] CR/PR at V-6-7.

[120] CR/PR at Table II-9.

[121] CR/PR at Table D-1.

that these declines corresponded to increases in subject imports' volume and market share.[122] U.S. producers' production, capacity utilization, and U.S. shipments all declined steadily from 2005 to 2007, but experienced some improvement when the interim periods were compared. Employment-related indicators generally declined, although hourly wages rose.[123]

The Commission found that the domestic industry's financial indicators were lackluster, despite rising prices and very strong demand throughout the period of investigation. The domestic industry's net sales quantities declined from 2005 to 2007. Net sales, by value, declined from 2005 to 2006, and then increased from 2006 to 2007. The domestic industry's operating income improved from *** in 2005 to *** in 2006 but declined in 2007. The domestic industry's operating income margin increased from 2005 to 2006, and then fell in 2007.[124]

The Commission examined the role of nonsubject imports in the U.S. market during the period of investigation. It found that SDGE were not a commodity product because they were produced to individual customer specifications. The Commission observed that nonsubject imports were generally priced above subject imports, particularly later in the period of investigation, and although nonsubject imports were present in substantial quantities, nonsubject import volume and market share fluctuated following the trends in apparent U.S. consumption. Moreover, nonsubject imports' market share declined significantly in 2007 when the domestic industry's condition worsened. The Commission concluded that adverse changes to the domestic industry's condition could not be attributed to nonsubject imports.[125]

In the expedited first five-year review, the Commission concluded that the limited record was insufficient for it to make a finding as to whether the domestic industry was vulnerable to the continuation or recurrence of material injury in the event of the revocation of the order. However, based on the information on that record, the Commission found that should the order be revoked, the likely significant volume and price effects of the subject imports would likely have a significant impact on the production, shipments, sales, market

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[122] *Original Determination*, USITC Pub. 4062 at 19. The Commission recognized that some indicators fluctuated during the period of investigation before recovering *** during interim 2008, after the petition was filed. *Id*; Confidential Original Determination at 28.

[123] *Original Determination*, USITC Pub. 4062 at 20.

[124] *Original Determination*, USITC Pub. 4062 at 20-21; Confidential Original Determination at 29-30.

[125] *Original Determination*, USITC Pub. 4062 at 21-23. The Commission addressed and rejected arguments by respondents that any adverse changes to the domestic industry's condition were not caused by subject imports, but rather by the poor performance of one of the two domestic producers (specifically by that producer's inability to control its direct labor, and selling, general and administrative costs) or by a *** in the domestic industry's export shipments. *Id.* at 22; Confidential Original Determination at 31-32. The Commission also addressed and rejected arguments that there was no adverse impact on the domestic industry because its profitability increased during the period of investigation, or because it allegedly could not supply the entire SDGE market. *Original Determination*, USITC Pub. 4062 at 22.

share, and revenues of the domestic industry. The Commission found that these declines would likely cause the domestic industry's profitability to fall.[126]

In its non-attribution analysis, the Commission acknowledged that although nonsubject imports continued to be present since the order was imposed, and in fact had increased their market share, no party argued that nonsubject imports or any other factor was likely to be an alternative cause of material injury to the domestic industry. The Commission found that upon revocation, the significant volume of subject imports would again likely take market share from the domestic industry through significant underselling and impair the industry's performance. Accordingly, the Commission concluded that, if the order were revoked, subject imports would likely have a significant impact on the domestic industry within a reasonably foreseeable time.[127]

2. The Current Review

During the period of review, the domestic industry's performance indicators fluctuated with demand. As apparent U.S. consumption increased by *** percent between 2016 and 2018, output, employment, and financial performance improved.[128] The domestic industry's capacity increased by *** percent from 2016 to 2018 and remained stable in interim 2018 and interim 2019.[129] The domestic industry's production increased by *** percent from 2016 and 2018, but it was *** percent lower in interim 2019 than interim 2018.[130] Capacity utilization for SDGE increased by *** percentage points from 2016 to 2018, and was *** percentage points lower in interim 2019 than in interim 2018.[131] The quantity of the domestic industry's U.S. shipments of SDGE increased by *** percent from 2016 to 2018, and was *** percent lower in

[126] *First Review Determination*, USITC Pub. 4469 at 15-16; Confidential First Review Determination at 21-22.

[127] *First Review Determination*, USITC Pub. 4469 at 16; Confidential First Review Determination at 23.

[128] CR/PR at Table I-9. Apparent U.S. consumption was *** percent lower in interim 2019 than in interim 2018. *Id*.

[129] The domestic industry's production capacity was *** metric tons in 2016, *** metric tons in 2017, and *** metric tons in 2018; it was *** metric tons in both interim 2018 and interim 2019. CR/PR at Table III-5.

[130] The domestic industry's production was *** metric tons in 2016, *** metric tons in 2017, and *** metric tons in 2018; it was *** metric tons in interim 2018 and *** metric tons in interim 2019. CR/PR at Table III-5.

[131] The domestic industry's capacity utilization rate was *** percent in 2016, *** percent in 2017, and *** percent in 2018; it was *** percent in interim 2018 and *** percent in interim 2019. CR/PR at Table III-5.

interim 2019 than in interim 2018.[132] The domestic industry's share of the U.S. market fluctuated over the period of review.[133]

The domestic industry's employment-related indicators also showed improvement from 2016 to 2018, and more modest reductions in interim 2019 compared to interim 2018. The number of production related workers ("PRWs") increased by *** percent from 2016 to 2018, hours worked increased by *** percent, and wages paid increased by *** percent; each of these indicators was *** percent lower in interim 2019 than interim 2018.[134] The domestic industry's productivity increased by *** percent from 2016 to 2018, and was *** percent lower in interim 2019 than interim 2018.[135]

The domestic industry's financial performance also improved during the period of review. Sales revenues increased by *** percent from 2016 to 2018 and were *** percent lower in interim 2019 than in interim 2018.[136] The industry's cost of goods sold ("COGS") to net sales ratio improved throughout the period.[137] The domestic industry's gross profits, operating income, and net income also improved throughout the period, with the most substantial improvement occurring from 2017 to 2018.[138] The domestic industry's gross profit margin improved from a period low of *** percent in 2016 to a period peak of *** percent in interim

[132] U.S. shipments were *** metric tons in 2016, *** metric tons in 2017, and *** metric tons in 2018; they were *** metric tons in interim 2018 and *** metric tons in interim 2019. CR/PR at Table III-7. Neither domestic producer reported end-of-period inventories. CR/PR at III-16.

[133] The domestic industry's share of the U.S. market was *** percent in 2014, *** percent in 2015, *** percent in 2016, *** percent in 2017, and *** percent in 2018; it was *** percent in interim 2018 and *** percent in 2019. CR/PR at Tables I-2 and I-9.

[134] The number of PRWs was *** in 2016, *** in 2017, and *** in 2018; *** in interim 2018 and *** in interim 2019. CR/PR at Table III-11.

Hours worked were *** in 2016, *** in 2017, and *** in 2018; they were *** in interim 2018 and *** in interim 2019. *Id*.

Wages paid were $*** in 2016, $*** in 2017, and $*** in 2018; and they were $*** in interim 2018 and $*** in interim 2019. *Id.*

[135] Productivity per 1,000 hours was *** metric tons in 2016, *** metric tons in 2017, and *** metric tons in 2018; it was *** metric tons in interim 2018 and *** metric tons in interim 2019. CR/PR at Table III-11.

[136] Sales revenues were *** in 2016, $*** in 2017, and $*** in 2018; and they were $*** in interim 2018 and $*** in interim 2019. CR/PR at Table C-1.

[137] The COGS to net sales ratio was *** percent in 2016, *** percent in 2017, and *** percent in 2018; it was *** percent in interim 2018 and *** percent in interim 2019. CR/PR at Table C-1.

[138] Gross profits were $*** in 2016, $*** in 2017, and $*** in 2018; they were $*** in interim 2018 and $*** in interim 2019. CR/PR at Table III-12.

Operating income was $*** in 2016, $*** in 2017, and $*** in 2018; it was $*** in interim 2018 and $*** in interim 2019. *Id*.

Net income was $*** in 2016, $*** in 2017, and $*** in 2018; it was $*** in interim 2018 and $*** in interim 2019. *Id*.

2019,[139] and its operating margin improved from a period low of *** percent in 2016 to a period peak of *** percent in in interim 2019.[140] Capital expenditures fluctuated over the period of review.[141]

On the basis of the domestic industry's improved performance and positive financial performance during the latter portion of the period of review, we do not find the domestic industry to be in a vulnerable condition. Output, employment, and financial performance all improved during the period of review, notwithstanding negative trends in trade and employment indicators in interim 2019. Additionally, the domestic producers assert that they will augment their production operations in the United States if the antidumping duty order remains in effect. They reported intentions to move production from nonsubject countries to the United States.[142] Domestic producers *** have asserted that they intend to invest in ***.[143] As part of these plans, ***.[144] ***.[145] Domestic producers assert that revoking the order would endanger these plans.[146]

We find that if the antidumping duty order were revoked, the likely significant volume of subject imports would likely undersell the domestic like product, and likely cause the domestic industry to lose sales or lower prices leading to lost revenue, and stop or deter the contemplated investments to expand production activities. Thus, any increase in subject import volume would likely lead to adverse trends in the domestic industry's production, shipments, market share, employment indicators, and financial performance within a reasonably foreseeable time.[147]

We have also considered factors other than subject imports in the U.S. market, including the presence of nonsubject imports, so as not to attribute injury from other factors to the subject imports. Nonsubject imports continued to be present in the U.S. market in large quantities during the period of review and accounted for *** percent of apparent U.S.

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[139] The domestic industry's gross profit margin was *** percent in 2016, *** percent in 2017, and *** percent in 2018; it was *** percent in interim 2018 and *** percent in interim 2019. CR/PR Table III-12.

[140] The domestic industry's operating margin was *** percent in 2016, *** percent in 2017, and *** percent in 2018; it was *** percent in interim 2018 and *** percent in interim 2019. CR/PR at Table C-1.

[141] Capital expenditures were $*** in 2016, $*** in 2017, and $*** in 2018; they were $*** in interim 2018 and $*** in interim 2019. CR/PR at Table C-1. ***. CR/PR at III-30 n. 34.

The domestic industry *** research and development costs during the period of review. CR/PR at Table III-15.

[142] Domestic Producers' Posthearing Brief at 26-27; *see also id*. at 33, 46-47, 49, and 53-55; *accord* Domestic Producers' Final Comments at 5.

[143] Domestic Producers' Prehearing Brief at 33.

[144] CR at II-1. Specifically, *** *Id*.

[145] Domestic Producers' Prehearing Briefs at 9.

[146] Domestic Producers' Posthearing Brief at 12, Q.19, Q.21, Q.30, Q.36, Q.37; ***

[147] We note that ***. That could limit the impact that subject imports would have on the domestic industry, to the extent subject imports were limited to that smaller size range. However, *** Domestic Producers' Posthearing Brief at 12; ***.

consumption in 2018.[148] Despite nonsubject imports' large market share, the domestic industry was able to improve its performance over the period of review. In light of the general substitutability of SDGE from all sources, we find that upon revocation the significant volume of low-priced subject imports would likely take market share from the domestic industry. Consequently, the subject imports would likely have adverse effects distinct from any that may be caused by nonsubject imports.

Accordingly, we conclude that revocation of the antidumping duty order on SDGE from China would likely have a significant impact on domestic producers of SDGE within a reasonably foreseeable time.

IV. Conclusion

For the above reasons, we determine that revocation of the antidumping duty order on imports of SDGE from China would likely lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

[148] Nonsubject imports' presence has fluctuated during the period of review, from *** percent in 2014, *** percent in 2015, *** percent in 2016, *** percent in 2017, and *** percent in 2018; it was *** percent in interim 2018 and *** percent in interim 2019. CR/PR at Tables I-2, I-9.

Part I: Introduction

Background

On May 1, 2019, the U.S. International Trade Commission ("Commission" or "USITC") gave notice, pursuant to section 751(c) of the Tariff Act of 1930, as amended ("the Act"),[1] that it had instituted a review to determine whether revocation of the antidumping duty order on small diameter graphite electrodes ("SD graphite electrodes") from China would likely lead to the continuation or recurrence of material injury to a domestic industry.[2] [3] On August 5, 2019, the Commission determined that it would conduct a full review pursuant to section 751(c)(5) of the Act.[4] The following tabulation presents information relating to the background and schedule of this proceeding:[5]

[1] 19 U.S.C. 1675(c).

[2] *Small Diameter Graphite Electrodes From China; Institution of a Five-Year Review,* 84 FR 18580*,* May 1, 2019. All interested parties were requested to respond to this notice by submitting the information requested by the Commission.

[3] In accordance with section 751(c) of the Act, the U.S. Department of Commerce ("Commerce") published a notice of initiation of five-year review of the subject antidumping duty order concurrently with the Commission's notice of institution. *Initiation of Five-Year (Sunset) Reviews,* 84 FR 18477, May 1, 2019*.*

[4] *Small Diameter Graphite Electrodes from China; Notice of Commission Determination To Conduct a Full Five-Year Review,* 84 FR 43615, August 21, 2019. The Commission found that the domestic interested party's response to its notice of institution (84 FR 18580, May 1, 2019) was adequate. The Commission found that the respondent interested party's response to its notice of institution was inadequate. The Commission also found that other circumstances warranted conducting a full review.

[5] The Commission's notice of institution, notice to conduct full review, scheduling notice, and statement on adequacy are referenced in appendix A and may also be found at the Commission's web site (internet address *www.usitc.gov*). Commissioners' votes on whether to conduct expedited or full review may also be found at the web site. Appendix B presents the domestic interested party's request to cancel the hearing in lieu of written questions.

Effective date	Action
February 26, 2009	Commerce's antidumping duty order on SD graphite electrodes from China (74 FR 8775)
May 1, 2019	Commission's institution of five-year review (84 FR 18580)
May 1, 2019	Commerce's initiation of five-year review (84 FR 18477)
August 5, 2019	Commission's determination to conduct full five-year review (84 FR 43615)
August 27, 2019	Commerce's final results of expedited second sunset review of the antidumping duty order (84 FR 44852)
September 23, 2019	Commission's scheduling of the review (84 FR 51619)
January 23, 2020	Commission's hearing – Cancelled (85 FR 4339)
March 4, 2020	Commission's vote
March 23, 2020	Commission's determination and views

The original investigation

The original investigation resulted from a petition filed by SGL Carbon LLC ("SGL Carbon"), Charlotte, North Carolina, and Superior Graphite Co. ("Superior Graphite"), Chicago, Illinois, on January 17, 2008, alleging that an industry in the United States is materially injured and threatened with material injury by reason of less-than-fair-value ("LTFV") imports of SD graphite electrodes from China. Following notification of a final determination by Commerce that imports of SD graphite electrodes from China were being sold at LTFV, [6] the Commission determined on February 19, 2009, that a domestic industry was materially injured by reason of LTFV imports of SD graphite electrodes from China.[7] Commerce published the antidumping duty order with final weighted-average dumping margins from 132.90 to 159.64 percent on SD graphite electrodes from China on February 26, 2009.[8]

[6] *Final Determination of Sales at Less Than Fair Value and Affirmative Determination of Critical Circumstances: Small Diameter Graphite Electrodes from the People's Republic of China,* 74 FR 2049, January 14, 2009.

[7] *Small Diameter Graphite Electrodes from China*, *Inv. No. 731-TA-1143 (Final)*, USITC Publication 4062, February 2009 ("Original publication"), p. I-1; *Small Diameter Graphite Electrodes from China*, 74 FR 8568, February 25, 2009.

[8] *Antidumping Duty Order: Small Diameter Graphite Electrodes from the People's Republic of China*, 74 FR 8775, February 26, 2009.

The first five-year review

In June 2014, the Commission completed an expedited review of the subject order and determined that revocation of the antidumping order on SD graphite electrodes from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[9] Following affirmative determinations in the first five-year review by Commerce and the Commission,[10] Commerce issued a continuation of the antidumping order on imports of SD graphite electrodes from China, effective June 23, 2014.[11]

Summary data

Table I-1 presents a summary of data from the original investigation, the expedited first five-year review, and the current full five-year review. As shown in table I-1, apparent U.S. consumption was markedly lower in 2013 than in either 2007 or 2018. The domestic interested parties in the first review – specifically the three active producers in 2013 (GrafTech International Ltd., SGL Carbon LLC, and Superior Graphite Company) – observed that the lower level of steel production had reduced SD graphite electrode consumption, "creating a difficult market for domestic producers," and asserted that the domestic industry found itself in "an extremely vulnerable position."[12] Despite more producers and greater capacity, the U.S. producers collectively reported lower quantities of production, U.S. shipments, and net sales in 2013 than in 2007, and notwithstanding greater market share, ***.

In 2018, however, apparent U.S. consumption was markedly higher than in 2013, though not at the level recorded in 2007. The two U.S. producers of SD graphite electrodes operational in 2018 reported lower capacity, production, capacity utilization, and employment than in 2007.[13] U.S. shipments and net sales were also lower by quantity, but higher by value,

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[9] *Small Diameter Graphite Electrodes from China, Inv. No. 731-TA-1143 (Review),* USITC Publication 4469, June 2014 ("First review publication").

[10] *Small Diameter Graphite Electrodes From the People's Republic of China: Final Results of the Expedited Sunset Review of the Antidumping Order*, 79 FR 26208, May 7, 2014. *Small Diameter Graphite Electrodes from China*, 79 FR 32750, June 6, 2014.

[11] *Small Diameter Graphite Electrodes From the People's Republic of China: Continuation of Antidumping Duty Order*, 79 FR 35523, June 23, 2014.

[12] First review publication, p. I-10.

[13] Original petitioner Superior Graphite accounted for *** percent of U.S. production of SD graphite electrodes in 2007, and had a product range of 8 -16 inches in diameter, while original petitioner SGL accounted for *** percent of U.S. production of SD graphite electrodes in 2007, and had a product

reflecting unit values in 2018 that were more than twice those in 2007 and contributing to an operating income margin of *** percent in 2018, compared to *** percent in 2007.[14]

Table I-2 presents information on U.S. producers' historical shipments, as well as imports from subject and nonsubject sources, from 2014 to 2018. Apparent U.S. consumption declined markedly between 2014 and 2016, as reflected in both U.S. producers' U.S shipments and U.S. imports. Apparent U.S. consumption partially recovered in 2017, then increased sharply in 2018. In terms of market share, U.S. producers experienced period lows in 2016-17, while imports from nonsubject sources experienced period highs.

range of 14 -16 inches (as well as 18-32 inches for larger graphite electrodes). Superior Graphite operated at *** percent capacity utilization in 2007, while SGL operated at *** percent. *Small Diameter Graphite Electrodes from China*, Inv. No. 731-TA-1143 (Final), Staff Report INV-GG-004 ("Original confidential report"), table III-2 (production share), p. I-3 note 3 (product mix), and table III-2 (capacity utilization).

[14] Original petitioner Superior Graphite's operating income margin in 2007 was ***. Original petitioner SGL's operating income margin in 2007 was ***. Original confidential report, table VI-2.

Table I-1
SD graphite electrodes: Comparative data from the original investigation and subsequent reviews, 2007, 2013, and 2018

Item	Original investigation	First review	Second review
	2007	2013	2018
	Quantity (metric tons)		
U.S. consumption quantity	***	***	***
	Share of quantity (percent)		
Share of U.S. consumption:			
U.S. producers' share	***	***	***
U.S. importers' share:			
China	***	***	***
All others sources	***	***	***
All import sources	***	***	***
	Value (1,000 dollars)		
U.S. consumption	***	***	***
	Share of value (percent)		
Share of U.S. consumption:			
U.S. producers' share	***	***	***
U.S. importers' share:			
China	***	***	***
All others sources	***	***	***
All import sources	***	***	***
	Quantity (metric tons); Value (1,000 dollars); and Unit value (dollars per metric ton)		
U.S. imports.--			
China			
Quantity	***	***	2,899
Value	***	***	34,435
Unit value	***	***	11,880
All other sources:			
Quantity	***	***	21,508
Value	***	***	90,039
Unit value	***	***	4,186
All import sources:			
Quantity	***	***	24,406
Value	***	***	124,474
Unit value	***	***	5,100

Table continued on next page.

Table I-1—Continued
SD graphite electrodes: Comparative data from the original investigation and subsequent reviews, 2007, 2013, and 2018

Item	Original investigation	First review	Second review
	2007	2013	2018
	Quantity (metric tons); Value (1,000 dollars); and Unit value (dollars per metric ton)		
U.S. industry:			
Capacity	***	***	***
Production	***	***	***
Capacity utilization (percent)	***	***	***
U.S. shipments:			
Quantity	***	***	***
Value	***	***	***
Unit value	***	***	***
Ending inventory	***	***	***
Inventories/total shipments	***	***	***
Production workers	***	***	***
Hours worked (1,000 hours)	***	***	***
Wages paid	***	***	***
Hourly wages	***	***	***
Productivity (metric tons per 1,000 hours)	***	***	***
Financial data:			
Net sales:			
Quantity	***	***	***
Value	***	***	***
Unit value	***	***	***
Cost of goods sold	***	***	***
Gross profit or (loss)	***	***	***
SG&A expense (loss)	***	***	***
Operating income or (loss)	***	***	***
Unit COGS	***	***	***
Unit operating income or (loss)	***	***	***
COGS / Sales (percent)	***	***	***
Operating income or (loss)/ net Sales (percent)	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Office of Investigations memorandum INV-X-160 (July 18, 2000), memorandum INV-DD-073 (May 30, 2006), memorandum INV-KK-084 (May 3, 2012), official U.S. import statistics, and compiled from data submitted in response to Commission questionnaires.

Table I-2
SD graphite electrodes: U.S. producers' U.S. shipments and U.S. importers' U.S. imports, 2014-18

Item	Calendar year				
	2014	2015	2016	2017	2018
	Quantity (metric tons)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.--					
China	4,205	60	484	1,198	2,899
Nonsubject sources	17,585	14,527	11,452	14,159	21,508
All import sources	21,789	14,587	11,937	15,357	24,406
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.--					
China	13,486	191	1,165	9,037	34,435
Nonsubject sources	57,758	45,316	31,662	36,857	90,039
All import sources	71,244	45,507	32,827	45,894	124,474
Apparent U.S. consumption	***	***	***	***	***
	Share of quantity (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.--					
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Share of Value (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.--					
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics using HTS statistical reporting numbers 8545.11.0010, accessed December 6, 2019.

Statutory criteria

Section 751(c) of the Act requires Commerce and the Commission to conduct a review no later than five years after the issuance of an antidumping or countervailing duty order or the suspension of an investigation to determine whether revocation of the order or termination of the suspended investigation "would be likely to lead to continuation or recurrence of dumping or a countervailable subsidy (as the case may be) and of material injury."

Section 752(a) of the Act provides that in making its determination of likelihood of continuation or recurrence of material injury--

> *(1) IN GENERAL.-- . . . the Commission shall determine whether revocation of an order, or termination of a suspended investigation, would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time. The Commission shall consider the likely volume, price effect, and impact of imports of the subject merchandise on the industry if the order is revoked or the suspended investigation is terminated. The Commission shall take into account--*
>
> *(A) its prior injury determinations, including the volume, price effect, and impact of imports of the subject merchandise on the industry before the order was issued or the suspension agreement was accepted,*
>
> *(B) whether any improvement in the state of the industry is related to the order or the suspension agreement,*
>
> *(C) whether the industry is vulnerable to material injury if the order is revoked or the suspension agreement is terminated, and*
>
> *(D) in an antidumping proceeding . . ., (Commerce's findings) regarding duty absorption . . ..*
>
> *(2) VOLUME.--In evaluating the likely volume of imports of the subject merchandise if the order is revoked or the suspended investigation is terminated, the Commission shall consider whether the likely volume of imports of the subject merchandise would be significant if the order is revoked or the suspended investigation is terminated, either in absolute terms or relative to SD graphite electrodesion or consumption in the United States. In so doing, the Commission shall consider all relevant economic factors, including--*
>
> *(A) any likely increase in SD graphite electrodesion capacity or existing unused SD graphite electrodesion capacity in the exporting China,*
>
> *(B) existing inventories of the subject merchandise, or likely increases in inventories,*
>
> *(C) the existence of barriers to the importation of such merchandise into countries other than the United States, and*
>
> *(D) the potential for SD graphite electrodes-shifting if SD graphite electrodesion facilities in the foreign China, which can be used to produce the subject merchandise, are currently being used to produce other SD graphite electrodess.*

(3) PRICE.--In evaluating the likely price effects of imports of the subject merchandise if the order is revoked or the suspended investigation is terminated, the Commission shall consider whether--

(A) there is likely to be significant price underselling by imports of the subject merchandise as compared to domestic like SD graphite electrodess, and

(B) imports of the subject merchandise are likely to enter the United States at prices that otherwise would have a significant depressing or suppressing effect on the price of domestic like SD graphite electrodess.

(4) IMPACT ON THE INDUSTRY.--In evaluating the likely impact of imports of the subject merchandise on the industry if the order is revoked or the suspended investigation is terminated, the Commission shall consider all relevant economic factors which are likely to have a bearing on the state of the industry in the United States, including, but not limited to–

(A) likely declines in output, sales, market share, profits, SD graphite electrodesivity, return on investments, and utilization of capacity,

(B) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, and

(C) likely negative effects on the existing development and SD graphite electrodesion efforts of the industry, including efforts to develop a derivative or more advanced version of the domestic like SD graphite electrodes.

The Commission shall evaluate all such relevant economic factors . . . within the context of the business cycle and the conditions of competition that are distinctive to the affected industry.

Section 752(a)(6) of the Act states further that in making its determination, "the Commission may consider the magnitude of the margin of dumping or the magnitude of the net countervailable subsidy. If a countervailable subsidy is involved, the Commission shall consider information regarding the nature of the countervailable subsidy and whether the subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement."

Organization of report

Information obtained during the course of the review that relates to the statutory criteria is presented throughout this report. A summary of trade and financial data for SD graphite electrodes as collected in the review is presented in appendix C. U.S. industry data are based on the questionnaire responses of two U.S. producers that are believed to have accounted for all domestic production of SD graphite electrodes in 2018. U.S. import data and related information are based on Commerce's official import statistics and the questionnaire responses of 12 U.S. importers of SD graphite electrodes that are believed to have accounted for *** percent of the subject U.S. imports during 2018, *** percent of nonsubject U.S. imports during 2018 and 70.0 percent of total U.S. imports during 2018. The Commission did not receive any questionnaire responses from any Chinese producers or exporters of SD graphite electrodes. Responses by U.S. producers, importers, and purchasers of SD graphite electrodes to a series of questions concerning the significance of the existing antidumping duty order and the likely effects of revocation of such an order are presented in appendix D.

Commerce's reviews[15]

Administrative reviews

Commerce has completed five antidumping duty administrative reviews with regard to subject imports of SD graphite electrodes from China. The results of the administrative reviews are shown in table I-3.

[15] Commerce has not issued any duty absorption findings or company specific revocations since the issuance of the order.

Table I-3
SD graphite electrodes: Administrative reviews of the antidumping duty order on U.S. imports from China

Date results published	Period of review	Producer or exporter	Margin (percent)
September 25, 2014 (79 FR 57508)	February 1, 2012 through January 31, 2013	Beijing Fangda Carbon Tech Co., Ltd	21.16
		Chengdu Rongguang Carbon Co., Ltd.	21.16
		Fangda Carbon New Material Co., Ltd.	21.16
		Fushun Carbon Co., Ltd. Hefei Carbon Co., Ltd.	21.16
		Xinghe County Muzi Carbon Co., Ltd.	21.16
		Jilin Carbon Import and Export Company	21.16
		PRC-wide entity	159.64
March 17, 2015 (80 FR 13825)	February 1, 2013 through January 31, 2014	Henan Sanli Carbon Products Co., Ltd. (Henan Sanli)	159.64
October 17, 2016 (81 FR 71480)	February 1, 2014 through January 31, 2015	Fangda Group	0.69
		Fushun Jinly Petrochemical Carbon Co., Ltd	0.00
		Jilin Carbon Import and Export COmp	0.69
February 16, 2017 (82 FR 10876)	February 1, 2015 through January 31, 2016	Fangda Group	159.64
		Fushun Jinly Petrochemical Carbon Co., Ltd	159.64
		Jilin Carbon Import and Export Company	159.64
July 16, 2018 (83 FR 32833)	February 1, 2016 through January 31, 2017	Fushun Jinly Petrochemical Carbon Co., Ltd	0.00

Source: Cited Federal Register notices.

Changed circumstances reviews

Commerce has completed no changed circumstances reviews with respect to SD graphite electrodes from China.

Scope rulings

Commerce has issued two affirmative determinations in anticircumvention proceedings concerning the subject order. In 2012, Commerce determined that certain SD graphite electrodes imported from the United Kingdom using component inputs of Chinese origin were circumventing and subject to the order because the finishing processes performed in the United Kingdom with respect to such merchandise were minor or insignificant.[16] In 2013, Commerce found that certain graphite electrodes of 17 inches in diameter imported from China were circumventing and subject to the order, concluding that such imports constituted merchandise altered in form or appearance in such minor respects that it was properly subject to the order.[17] Commerce has conducted no additional scope rulings with respect to SD graphite electrodes from China since the first review.

Five-year reviews

Commerce has issued the final results of its expedited review with respect to the antidumping duty order on SD graphite electrodes from China. Table I-4 presents the dumping margins calculated by Commerce in its original investigation and subsequent reviews.

[16] *Small Diameter Graphite Electrodes From the People's Republic of China: Affirmative Final Determination of Circumvention of the Antidumping Duty Order*, 77 FR 47596, 47600, August 9, 2012.

[17] *Small Diameter Graphite Electrodes From the People's Republic of China: Affirmative Final Determination of Circumvention of the Antidumping Duty Order and Rescission of Later-Developed Merchandise Anticircumvention Inquiry*, 78 FR 56864, 5686, September 18, 2013.

Table I-4
SD graphite electrodes: Commerce's original and five-year review dumping margins for producers/exporters in China

Producer/exporter	Original margin (*percent*)	First five-year review margin (*percent*)	Second five-year review margin (*percent*)
PRC-wide	132.90-159.64	132.90-159.64	132.90-159.64

Source: *Antidumping Duty Order: Small Diameter Graphite Electrodes from the People's Republic of China*, 74 FR 8775, February 26, 2009. *Small Diameter Graphite Electrodes From the People's Republic of China: Final Results of the Expedited Sunset Review of the Antidumping Duty Order,* 79 FR 26208, May 7, 2014. *Small Diameter Graphite Electrodes From the People's Republic of China: Final Results of the Expedited Second Sunset Review of the Antidumping Duty Order*, 84 FR 44852, August 27, 2019.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:

> *{A}ll small diameter graphite electrodes of any length, whether or not finished, of a kind used in furnaces, with a nominal or actual diameter of 400 millimeters (16 inches) or less, and whether or not attached to a graphite pin joining system or any other type of joining system or hardware. The merchandise covered by the order also includes graphite pin joining systems for small diameter graphite electrodes, of any length, whether or not finished, of a kind used in furnaces, and whether or not the graphite pin joining system is attached to, sold with, or sold separately from, the small diameter graphite electrodes. Small diameter graphite electrodes and graphite pin joining systems for small diameter graphite electrodes are most commonly used in primary melting, ladle metallurgy, and specialty furnace applications in industries including foundries, smelters, and steel refining operations. Small diameter graphite electrodes and graphite pin joining systems for small diameter graphite electrodes that are subject to the order are currently classified under the HTSUS subheadings 8545.11.0010,[18] 3801.10, [19] and 8545.11.0020.[20] The HTSUS numbers are provided for convenience and customs purposes, but written description of the scope is dispositive.[21]*

[18] The scope described in the order refers to the HTSUS subheading 8545.11.0000. Starting in 2010, subheading 8545.11 was the subdivided such that graphite electrodes not exceeding 425mm (16.7 inches) were provided for in statistical reporting number 8545.11.0010, while larger graphite electrodes were provided for in statistical reporting number 8545.11.0020.

[19] *Small Diameter Graphite Electrodes From the People's Republic of China: Affirmative Final Determination of Circumvention of the Antidumping Duty Order*, 77 FR 47596, August 9, 2012, and accompanying Issues and Decision Memorandum at Comment 6 (the scope of the order is amended to include imports classifiable under HTSUS 3801.10, i.e., unfinished small diameter graphite electrodes).

[20] *Small Diameter Graphite Electrodes From the People's Republic of China: Affirmative Final Determination of Circumvention of the Antidumping Duty Order and Rescission of Later-Developed Merchandise Anticircumvention Inquiry*, 78 FR 56864, September 16, 2013, and accompanying Issues and Decision Memorandum at Comments 1 and 2 (the scope of the order is amended to include large diameter graphite electrodes, specifically those of 17 inches produced by Jilin Carbon classifiable under HTSUS 8545.11.0020).

[21] *Small Diameter Graphite Electrodes From the People's Republic of China: Final Results of Expedited Second Sunset Review of the Antidumping Duty Order*, 84 FR 44852, August 27, 2019.

Tariff treatment

SD graphite electrodes are currently principally imported under HTS statistical reporting number 8545.11.0010 (graphite electrodes, not exceeding 425 mm in diameter, of a kind used for furnaces).[22] Prior to January 1, 2010, SD graphite electrodes were imported under HTS statistical reporting number 8545.11.0000 (all diameters of carbon or graphite electrodes of a kind used for furnaces). Unfinished graphitized SD graphite electrodes may enter under HTS statistical reporting number 3801.10.5000 (other artificial graphite). SD graphite electrodes imported from China under both HTS subheading 8545.11.00 and 3801.10.50 enter the U.S. market at a column 1-general duty rate of "free." Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Section 301 tariff treatment

Products of China under HTS subheadings 3801.10.50 and 8545.11.00 were included in the third enumeration ("Tranche 3" or "List 3") of products imported from China subject to additional tariffs under Section 301 of the Trade Act of 1974. Goods that are the product of China and that entered the United States on or after September 24, 2018 and prior to May 10, 2019 were subject to additional 10 percent ad valorem duties (annexes A and C of 83 FR 47974).[23] An earlier action to raise that rate in March 2019 was postponed. Goods exported before May 10 but entered into the United States by the close of June 14, 2019 continued to be charged the 10 percent additional duty rate. Goods entered on and after June 15, 2019 are subject to the additional 25 percent ad valorem duties, regardless of date of export.[24] See also U.S. notes 20(e) and 20(f) to subchapter III of HTS chapter 99.

[22] Imports entering the United States under HTS statistical reporting number 8545.11.0010 may also include items that are greater than 400 mm in nominal or actual diameter and equal to or less than 425 mm. Graphite electrodes exceeding 425 mm in diameter are imported under HTS statistical reporting number 8545.11.0020 (graphite electrodes, exceeding 425 mm in diameter, of a kind used for furnaces).

[23] *Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 FR 47974, September 21, 2018.

[24] *Additional Implementing Modification to Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 84 FR 26930, June 10, 2019.

The product

Description and applications[25]

SD graphite electrodes are cylindrical in shape, produced from various grades of petroleum coke, and used primarily in ladle metallurgy, specialty furnace applications, and primary low-duty melting, such as electric arc furnaces ("EAFs") (figure I-1). SD graphite electrodes are used in steelmaking to generate the heat necessary to melt and further refine steel.

Figure I-1
SD graphite electrodes: Electrode and connecting pin

Source: Tokai Carbon Website, https://www.tokaicarbon.co.jp/en/products/graphite/, retrieved December 9, 2019.

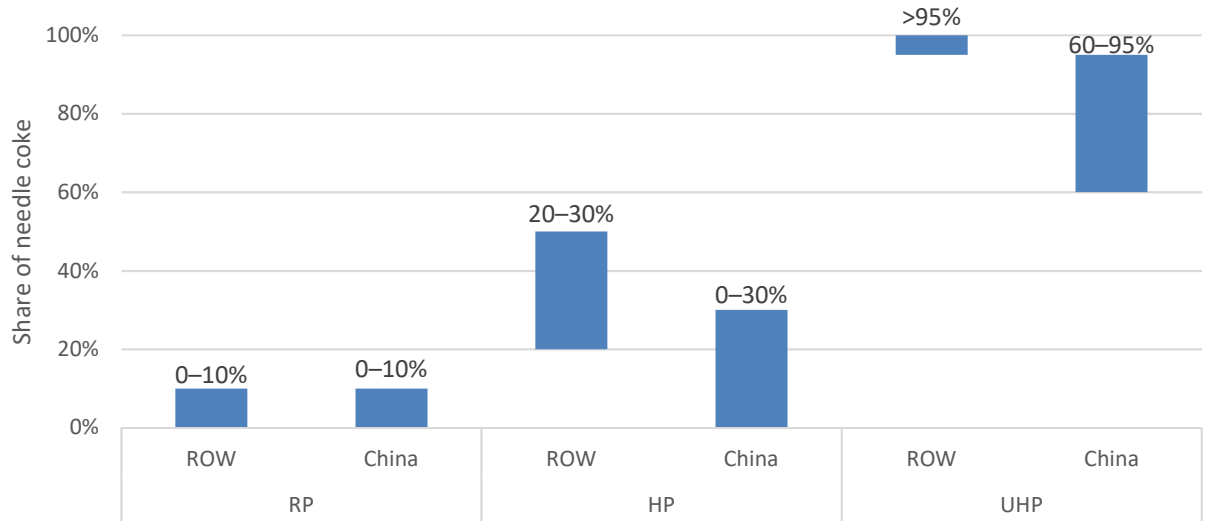
SD graphite electrodes typically are fabricated from a range of different grades of petroleum coke, from low grade anode coke to premium high grade needle coke or a blend of the two. Anode coke is used in low intensity applications such as refining operations (ladle) and medium- to low-duty melting applications (foundries). As a result of the different raw materials used, SD graphite electrodes are produced in a variety of grades, ranging from regular power ("RP") to ultra high power ("UHP"). In general, firms located outside of China typically use a

[25] Unless otherwise noted, this information is based on the first review publication, pp. I-6 through I-7, and the original publication, pp. I-6 through I-8.

higher proportion of needle coke (figure I-2). Some Chinese producers also substitute lower quality coal-based needle coke for higher quality petroleum needle coke. The type and proportion of needle coke used impacts the quality of the electrode.[26] Select raw material inputs and alternative uses are shown in figure I-3.

Figure I-2

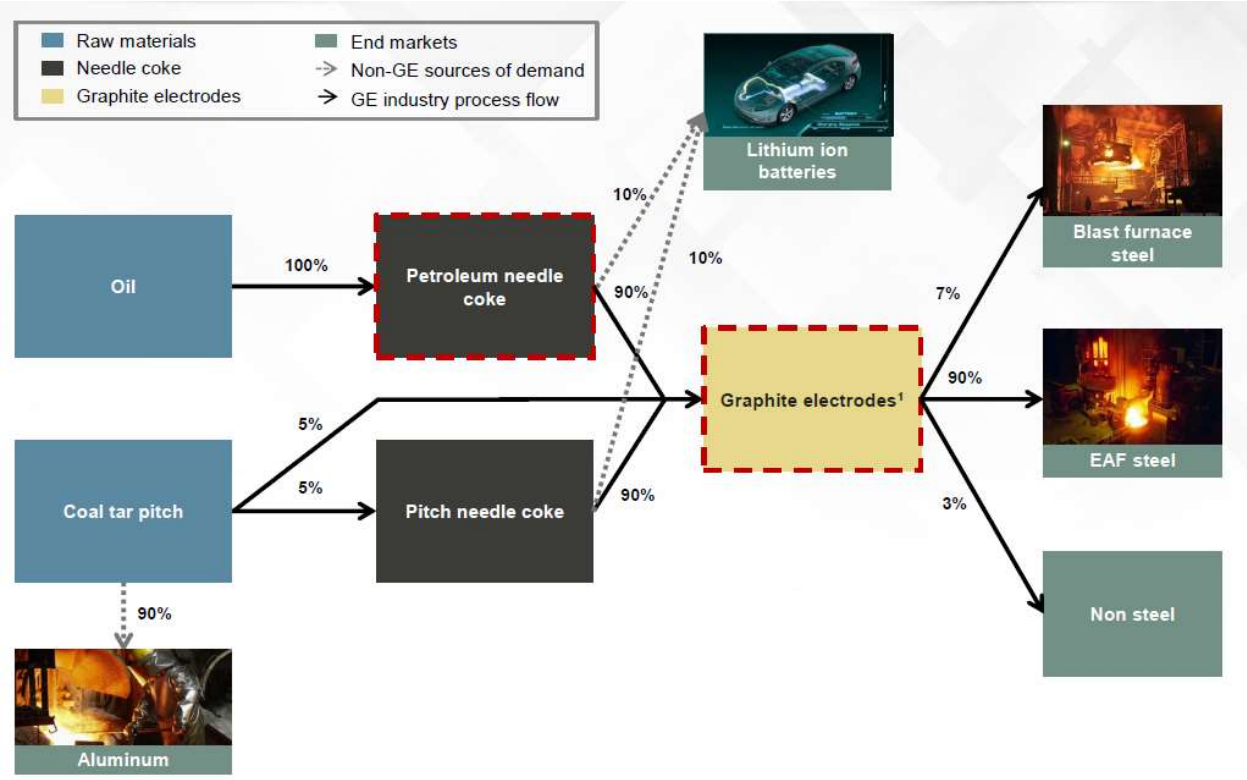
SD graphite electrodes: Share of needle coke used in graphite electrodes (including large diameter), by Chinese and non-Chinese producers



Source: Fisher, Harry, "Needle Coke Market Under Pressure: Is There an End in Sight," *CRU Group*, May 9, 2019, https://www.crugroup.com/knowledge-and-insights/insights/2019/needle-coke-market-under-pressure-is-there-an-end-in-sight/, retrieved June 13, 2019.

[26] Fisher, Harry, "Needle Coke Market Under Pressure: Is There an End in Sight," *CRU Group*, May 9, 2019, https://www.crugroup.com/knowledge-and-insights/insights/2019/needle-coke-market-under-pressure-is-there-an-end-in-sight/, retrieved June 13, 2019. At the time of the original investigation, ***. Domestic producer SGL used a ***. Original confidential report, p. I-7.

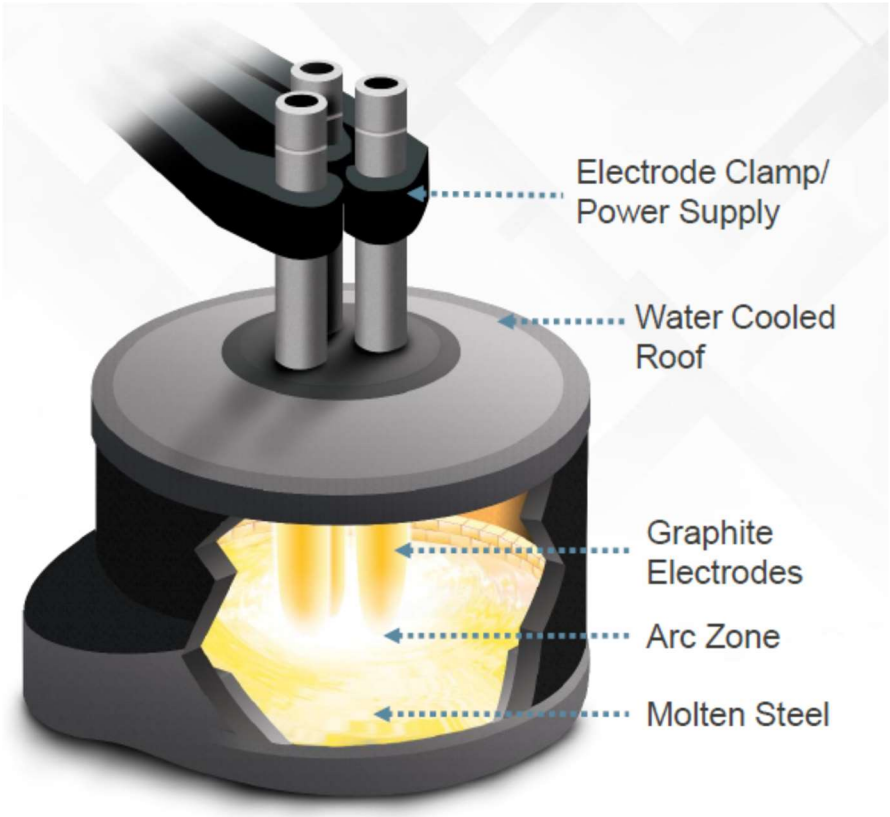
Figure I-3
SD graphite electrodes: Needle coke inputs



Note: Oil refers to decant oil. Coal tar pitch is also used directly in graphite electrodes as a binder.
Sources: *GrafTech International, Credit Suisse 31st Annual Basic Materials Conference,* September 12–13, 2018, p. 17, http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njk5NzcyfENoaWxkSUQ9NDExMjk2fFR5cGU9MQ==&t=1, retrieved June 13, 2019; Fisher, Harry, "Needle Coke Market Under Pressure: Is There an End in Sight," *CRU Group*, May 9, 2019, https://www.crugroup.com/knowledge-and-insights/insights/2019/needle-coke-market-under-pressure-is-there-an-end-in-sight/, retrieved June 13, 2019.

SD graphite electrodes conduct electricity, generating the heat necessary to melt scrap metal, iron ore, or other raw materials used to produce steel or other metals (figure I-4). Electricity at very high amperes passes though the SD graphite electrodes and creates an electric arc between the electrodes and the raw material. Typically, electrodes are joined in columns by a threaded connecting system, most commonly a graphite connecting pin that is tapered and threaded at both ends. Alternating current EAFs generally use three columns of electrodes and direct current furnaces use one column. The electrodes are fed through holes in the top of the EAFs and held in place by electrical current carrying holders and arms designed for the specific size of electrode to be used. Because of the intensity of the melting process, the electrodes are consumed continuously during the course of the production of metal.

Figure I-4
SD graphite electrodes: Graphite electrodes in an electric arc furnace



Source: *GrafTech International, Credit Suisse 31st Annual Basic Materials Conference,* September 12–13, 2018, p. 3, http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njk5NzcyfENoaWxkSUQ9NDExMjk2fFR5cGU9MQ==&t=1, retrieved June 13, 2019.

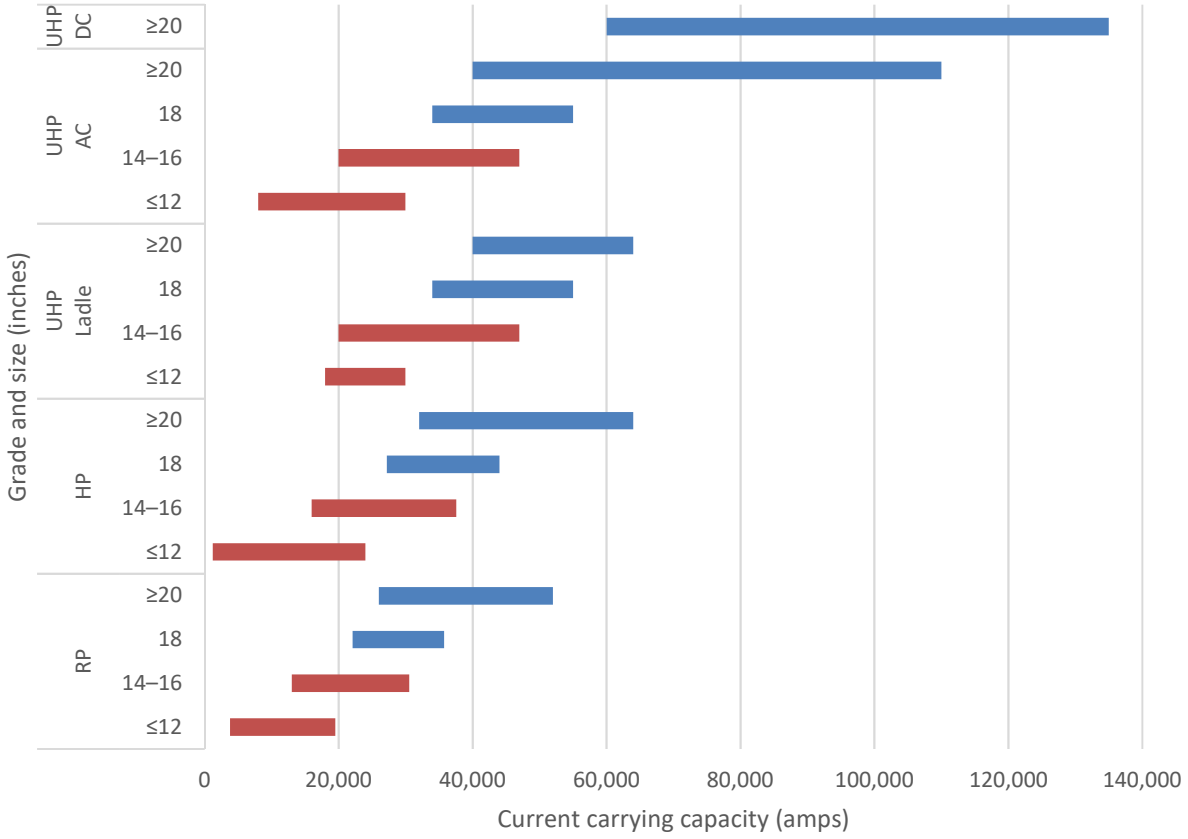
Applications for graphite electrodes, including SD graphite electrodes, vary with size of electrode. Ladle furnaces (refining furnaces) use graphite electrodes that are 10 to 18 inches.[27] According to respondents in the original investigation, the foundry segment uses 3 to 24 inch in diameter SD graphite electrodes, and is the primary user of electrodes 8 inches and under. Alternating current furnaces use 16 to 28 inch electrodes, with most electrodes 20 to 28 inches.[28] Other applications for 8 to 24 inch electrodes and above include refining slag, making abrasives, fusing silica, and producing iron and titanium.

[27] *Tokai Carbon webpage*, https://www.tokaicarbon.co.jp/en/products/graphite/, retrieved June 13, 2019.

[28] Direct current furnaces use 22 to 32 inch electrodes. *Tokai Carbon webpage*, https://www.tokaicarbon.co.jp/en/products/graphite/, retrieved June 13, 2019.

The grade of coke, along with other characteristics such as size, determines the amount of current an electrode can carry. SD graphite electrodes typically have current carrying capacity ranging from less than 10,000 amps to almost 50,000 amps (figure I-5). Larger graphite electrodes typically have current carrying capacities from more than 20,000 amps to over 140,000 amps.[29]

Figure I-5
Electrodes: Current carrying capacity, Graphite India electrodes



Note: Sizes produced by Graphite India vary by grade and application.
Source: Graphite India Ltd., "Graphite Electrodes Brochure," n.d., p. 5, https://www.graphiteindia.com/wp-content/uploads/Product_Brochure_of-Graphite-Electrode-1.pdf, retrieved February 7, 2020.

[29] Graphite India Ltd., "Graphite Electrodes Brochure," n.d., p. 5, https://www.graphiteindia.com/wp-content/uploads/Product_Brochure_of-Graphite-Electrode-1.pdf, retrieved February 7, 2020; GrafTech, UCAR brochure, n.d., p. 10, https://s2.q4cdn.com/282965219/files/doc_downloads/customer/UCAR-GE-Brochure-(2019-Update).pdf, retrieved February 7, 2020; HEG India Ltd., "World Class UHP Graphite Electrodes," n.d., http://hegltd.com/wp-content/uploads/2017/02/brochure.pdf, retrieved February 7, 2020.

High-grade graphite electrodes are generally consumed every 8–10 hours in an EAF.[30] For SD graphite electrodes in ladle furnace and foundry applications, the consumption rate typically ranges from 0.2 to 1.5 pounds of electrodes per ton of steel processed. Larger graphite electrodes' ratio of consumption in large steel mill EAFs can range from 1.5 to 12 pounds of electrodes per ton of steel processed. The rate of consumption is affected by the characteristics of the electrode, including the current carrying capacity, coefficient of thermal expansion, flexural strength, and specific electrical resistance (table I-5). In addition, the rate of consumption is impacted by the type and characteristics of the application, such as the heat, volume of steel, type of scrap, mechanical stress, presence of free oxygen, and different processing time.[31]

Table I-5
Electrodes: Physical characteristics, GrafTech electrodes

Property	Grade	SD graphite electrodes	Larger graphite electrodes
Bulk density (g/m^3)	AGR	1.55–1.65	1.56–1.66
	AGX	1.66–1.74	1.66–1.75
Specific resistance (μΩm)	AGR	6.0–8.0	5.5–7.0
	AGX	4.7–6.0	4.1–5.4
Coefficient of thermal expansion (μm/Kqm)	AGR	0.5–1.5	0.2–1.8
	AGX	0.2–1.4	0.15–0.6
Flexural strength (PSI)	AGR	900–1,800	800–1,800
	AGX	1,400–2,000	1,200–1,900

Note: AGX is GrafTech's premium grade and AGR is their standard grade.
Source: GrafTech, UCAR brochure, n.d., p. 6, https://s2.q4cdn.com/282965219/files/doc_downloads/customer/UCAR-GE-Brochure-(2019-Update).pdf, retrieved February 7, 2020.

[30] Domestic interested parties' posthearing brief, exhibit 1, p. 5.
[31] Domestic interested parties posthearing brief, exhibit 1, pp. 5–6.

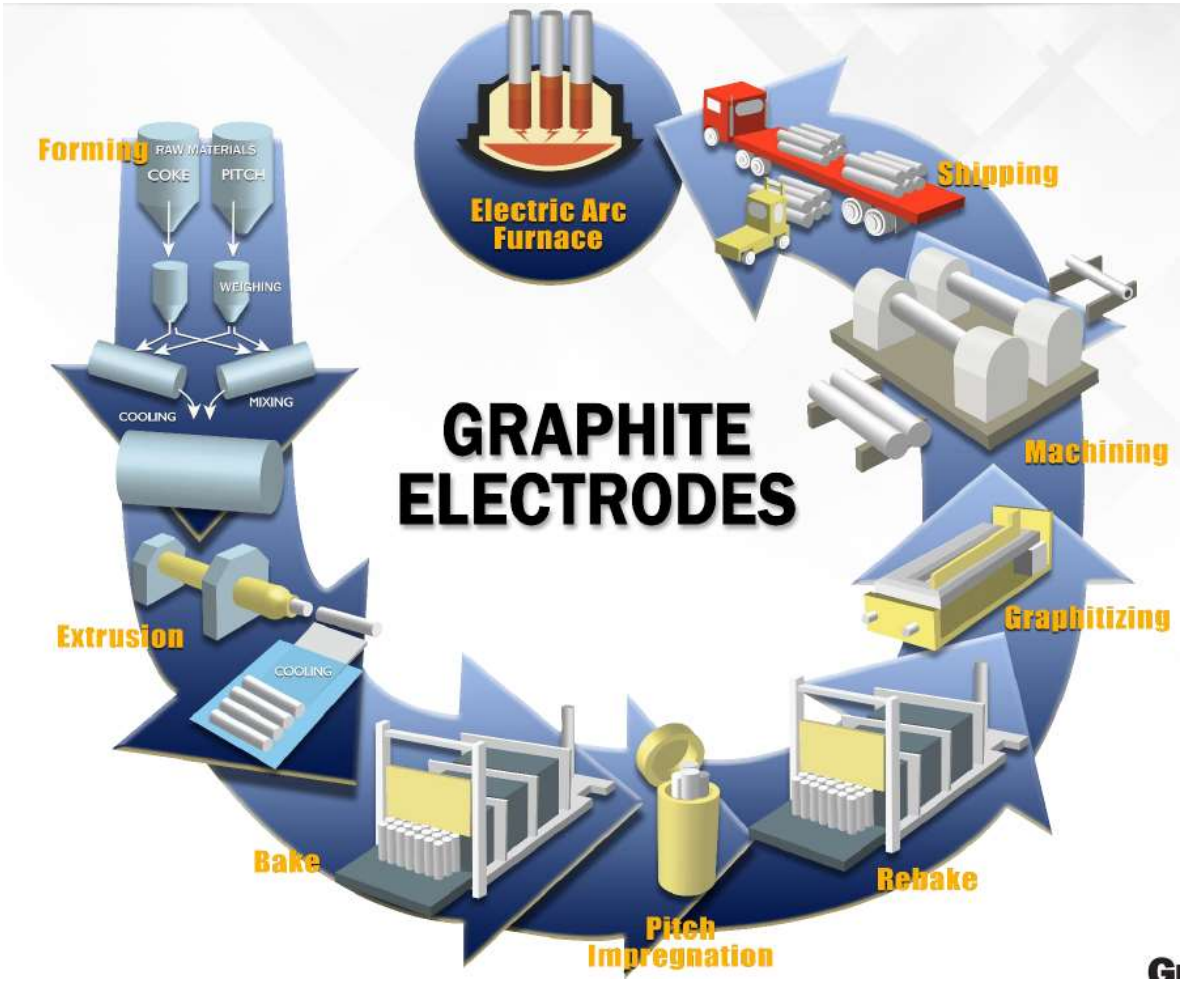
Manufacturing processes[32]

The production of graphite electrodes begins with the high temperature blending of crushed and screened petroleum coke with coal or petroleum tar pitch (figure I-6). The mix is then charged into a ram type hydraulic press from which a cylindrical column is extruded and cooled. These "green electrodes" then enter an oven to undergo a baking process. The heating process follows a predetermined and gradually increasing heating curve, reaching a final temperature of approximately 900 degrees Centigrade. During this stage, the petroleum pitch is converted into hard coke, and impurities are removed. After the baking process, the electrode forms may be impregnated with a special pitch and rebaked, filling pores to increase density and strength, and lowering the electrical resistivity.[33] The electrode forms are packed in electric furnaces surrounded by carbon particles to form a solid mass for graphitization. An electric current is passed through the furnace, raising the temperature to approximately 3,000 degrees Centigrade (5,000 degrees Fahrenheit).

[32] Unless otherwise noted, this information is based on the first review publication, p. I-7, and the original publication, pp. I-9 through I-11.

[33] SD graphite electrodes are not always impregnated, in contrast to larger graphite electrodes.

Figure I-6
SD graphite electrodes manufacturing process



Source: *GrafTech International, Credit Suisse 31st Annual Basic Materials Conference,* September 12–13, 2018, p. 19, http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njk5NzcyfENoaWxkSUQ9NDExMjk2fFR5cGU9MQ==&t=1, retrieved June 13, 2019.

The graphite electrodes, after cooling, may then go to a final stage to be machined to exact dimensions and tolerances. This stage may also include machining and fitting the ends of the electrode with a threaded graphite pin joining system (also known as a pinning or connecting system). The electrode size and prevailing industrial standards dictate the diameter size and threading of the connecting pin. The finished product is then packaged for shipment, typically placed between wooden chocks, and packed in wooden crates for protection during shipping. SD graphite electrodes may also be bundled in steel strips before packing.

Domestic like product issues

In the original investigation, the Commission defined a single domestic like product consisting of those graphite electrodes described in the scope. The Commission considered and rejected respondents' request to define the domestic like product to include graphite electrodes that were not within the scope definition.[34] In the first review, the responding domestic producers did not seek a different definition of the domestic like product. The Commission concluded that the record in the expedited review did not indicate any significant changes in the characteristics or uses of SD graphite electrodes and again defined a single domestic like product, corresponding to the scope.[35] In the current review, the responding domestic producer indicated that it agrees with the Commission's prior definitions of the domestic like product, but reserved the right to comment on the appropriate definition during the course of the proceeding.[36]

[34] The Commission found the issue to be a close one. It recognized that there were a number of ways in which graphite electrodes might be viewed as forming a continuum, including that price, current carrying capacity, and premium needle coke content all tended to increase with the size of the electrode, and that electrodes of adjacent sizes were most comparable with respect to these attributes. The Commission concluded, however, that, on balance, the record supported limiting the domestic like product to the product described in the scope (abbreviated "SDGE") rather than expanding the domestic like product to include larger graphite electrodes (abbreviated "LDGE"). It found that the features of graphite electrodes established a clear dividing line between SDGE and LDGE at 16 inches in diameter. First, there was very little overlap in end uses. SDGE were used generally in foundry, specialty furnace applications, and steel mill ladle applications, whereas the great majority of LDGE were used for primary melting of steel scrap in mini-mill electric arc furnaces. Second, there was very limited overlap in manufacturing facilities and equipment used to produce SDGE and LDGE. Of the four producers of graphite electrodes during the original investigation, only one, SGL, was able to produce both products on the same equipment using the same employees. Third, although interchangeability of all graphite electrodes was generally limited to adjacent diameter sizes, SDGE could not be substituted for LDGE in heavy melting applications due to coke content and other physical characteristics. Finally, purchasers did not use SDGE and LDGE for the same applications, often purchased them in separate transactions, and that the level of technical support and service for SDGE and LDGE could vary. Original publication, pp. 9-10.

[35] First review publication, pp. 5-6.

[36] Domestic interested party's response to the notice of institution, May 31, 2019, p. 21.

U.S. market participants

U.S. producers

During the original investigation, three firms supplied the Commission with information on their U.S. operations with respect to graphite electrodes, two of which produced SD graphite electrodes. These firms accounted for all known production of SD graphite electrodes in 2007.[37] During the expedited first five-year review, three firms supplied the Commission with information on their U.S. operations with respect to SD graphite electrodes. These firms accounted for all known production of SD graphite electrodes in 2013.[38]

In the current proceeding, the Commission issued U.S. producers' questionnaires to five firms, two of which provided the Commission with information on their product operations. These firms are believed to account for all production of U.S. production of SD graphite electrodes in 2018. Presented in table I-6 is a list of current domestic producers of SD graphite electrodes and each company's position on continuation of the order, production locations, and share of reported production of SD graphite electrodes in 2018.

Table I-6
SD graphite electrodes: U.S. producers, positions on order, location of production, and share or reported, 2018

Firm	Position on continuation of order	Production location(s)	Share of production (percent)
GrafTech	***	St Marys, PA Brooklyn Heights, OH	***
Tokai Carbon	***	Ozark, AR Hickman, KY	***
Total			100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires.

[37] The two U.S. producers that supplied the Commission with usable questionnaire information during the original investigation: SGL Carbon LLC and Superior Graphite. Original publication, table III-1.

[38] The three U.S. producers that supplied the Commission with usable questionnaire information during the expedited first five-year review: SGL Carbon, GrafTech and Superior Graphite. First review publication, p. I-9.

Table I-7
SD graphite electrodes: U.S. producers SD graphite electrodes ownership, related and/or affiliated firms

Item / Firm	Firm Name	Affiliated/Ownership
Ownership:		
***	***	***
***	***	***
Related importers/exporters:		
***	***	***
***	***	***
Related producers:		
***	***	***
***	***	***
***	***	***
***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

As indicated in table I-7, two U.S. producers are related to foreign producers of SD graphite electrodes and two are related to U.S. importers of SD graphite electrodes from sources other than China. In addition, as discussed in greater detail in Part III, no U.S. producers directly import the subject merchandise and none purchase the subject merchandise from U.S. importers.

U.S. importers

In the original investigation, 12 U.S. importing firms supplied the Commission with usable information on their operations involving the importation of SD graphite electrodes, accounting for 58.3 percent of U.S. imports of SD graphite electrodes from China under HTS subheading 8545.11.00, a category that includes out-of-scope merchandise, during January 2005 - September 2008.[39] ***, and *** accounted for *** percent of reported imports of SD graphite electrodes from China in 2007, and *** percent adjusted imports from all other sources.[40] *** also reported imports from ***.[41] *** accounted for *** percent of adjusted imports from all other sources in 2007.[42] In the expedited first five-year review the Commission did not receive responses from respondent interested parties.

In the current proceedings, the Commission issued U.S. importers' questionnaires to 90 potential importers of SD graphite electrodes, as well as to all U.S. producers of SD graphite electrodes. Usable questionnaire responses were received from 12 firms, representing *** percent of U.S. imports from China. Table I-8 lists all responding U.S. importers of SD graphite electrodes from China and other sources, their locations, and their shares of U.S. imports in 2018.

[39] Investigation No. 731-TA-1143 (Review): Small Diameter Graphite Electrodes from China – Staff Report, INV-MM-036, May 6, 2014 ("First review confidential report"), p. I-16.

[40] First review confidential report, p. I-16.

[41] First review confidential report, p. I-16.

[42] First review confidential report, p. I-16.

Table I-8
SD graphite electrodes: U.S. importers, source(s) of imports, U.S. headquarters, and shares of imports in 2018

Firm	Headquarters	Share of imports by source (percent)		
		China	Nonsubject sources	All import sources
Ameri-Source Specialty Products, Inc.	Bethel Park, PA	***	***	***
Cajun Buggies	Kenner, LA	***	***	***
Fedmet	Wilmington, DE	***	***	***
GES	Parma, OH	***	***	***
GrafTech	Brooklyn Heights, OH	***	***	***
M. Brashem	Bellevue, WA	***	***	***
Ossola	Granite City, IL	***	***	***
Showa Denko	Ridgeville, SC	***	***	***
Sumitomo	Denver, CO	***	***	***
TOKAI Carbon	Charlotte, NC	***	***	***
Traxys Cometals	New York, NY	***	***	***
UK Carbon	Derbyshire, United Kingdom	***	***	***
Total		***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. purchasers

The Commission received questionnaires from 10 purchasers representing approximately *** of U.S. apparent consumption of SD graphite electrodes 2018. Four purchasers were based in Ohio, with the rest in ***. Eight of these purchasers were steel mills, one was a distributor, and one was a *** producer. The largest purchasers (based on 2018 purchases of SD graphite electrodes) were ***. In 2018, six purchasers had purchased U.S.-produced SD electrodes, two purchasers had purchased Chinese product, and six had purchased product from other countries, including Austria, Germany, India, Italy, Japan, Mexico, and Ukraine.

Apparent U.S. consumption and market shares

Data concerning apparent U.S. consumption of SD graphite electrodes and U.S. market shares are presented in table I-9. Imports from nonsubject sources increased from 2016 to 2017 increased by 2,707 metric tons. From 2017 to 2018 imports from nonsubject countries increased by 7,349 metric tons. Imports from nonsubject countries were 1,465 metric tons lower in January-September 2019 than January-September 2018.

Table I-9
SD graphite electrodes: Apparent U.S. consumption and U.S. market shares, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Quantity (metric tons)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.--					
China	484	1,198	2,899	2,730	852
Nonsubject sources	11,452	14,159	21,508	15,461	13,993
All import sources	11,937	15,357	24,406	18,190	14,844
Apparent consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.--					
China	1,165	9,037	34,435	32,322	5,934
Nonsubject sources	31,662	36,857	90,039	59,291	76,002
All import sources	32,827	45,894	124,474	91,613	81,937
Apparent consumption	***	***	***	***	***
	Share of quantity (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.--					
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of value (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. imports from.--					
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics using HTS statistical reporting numbers 8545.11.0010, accessed December 6, 2019.

Figure I-7 presents apparent U.S. consumption by source. Figure I-8 presents 2018 shipments by source and application.

Figure I-7
SD graphite electrodes: Apparent U.S. consumption, 2016-18, January to September 2018, and January to September 2019

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics using HTS statistical reporting numbers 8545.11.0010, accessed December 6, 2019.

Figure I-8
SD graphite electrodes: U.S. shipments by application and source, 2018

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and presented in Table III-8 and Table IV-7.

Part II: Conditions of competition in the U.S. market

U.S. market characteristics

SD graphite electrodes typically are used as conductors of electricity in furnaces to heat and melt scrap metal or other material used to produce steel and other materials. SD graphite electrodes are also used in primary melting and ladle metallurgy. The demand for SD graphite electrodes is thus largely determined by steel production.

Since the last review, major developments in the SD graphite electrode market include substantial increases in the price of needle coke (used in making SD graphite electrodes), the exit of U.S. producer Superior Graphite from the market, and the section 232 tariffs on steel. The global SD graphite electrode market was in a situation of oversupply in 2013, but by 2017, had reached a point of shortage, mainly in the United States and Europe, due to reductions in production following the previous global price deterioration over 2012-16.[1]

Apparent U.S. consumption of SD graphite electrodes *** during 2016 to 2018. However, apparent U.S. consumption in January-September 2019 was more than *** percent lower than in the same period of 2018.

U.S. producers and importers were asked if there had been any significant changes to the product mix, range, or marketing of SD electrodes since January 1, 2014. They were asked to divide their answer into two parts: whether there had been any change in customer preferences for HP, UHP, and/or RP SD electrodes;[2] and whether there had been any other changes. Both U.S. producer/importers and nine other importers indicated that there had not been any changes. Importer *** stated that technological improvements were allowing end users to accept lower-grade (among HP, UHP, and RP) and less expensive product for the same applications. U.S. producer/importer *** and nine other importers did not anticipate any changes. U.S. producer/importer *** anticipated that ***. Importer *** stated that if Chinese product is allowed to "flood" the market, it will put U.S. suppliers out of business.

[1] Internal documents submitted by purchaser ***, and other information in this chapter.

[2] SD graphite electrodes may be produced according to different grades, including regular power ("RP"), normal power ("NP"), medium power ("MP"), high power ("HP"), super-high power ("SHP"), and ultra-high power ("UHP").

Impact of section 232 tariffs on steel

In April 2017, the U.S. Department of Commerce announced a section 232 investigation on imports of steel, and in March 2018, the President announced additional import duties for steel mill articles. Because SD graphite electrodes are used in steel production, questionnaires in this review asked SD graphite electrode producers, importers, and purchasers about the effects of the section 232 duties on U.S. demand and prices of SD graphite electrodes.

Many market participants described the section 232 duties as having increased U.S. demand for SD graphite electrodes, but some also described demand as increasing simultaneously for other reasons. *** U.S. producer/importers, one additional importer, and four purchasers indicated that the imposition of the section 232 tariffs on steel had an impact on the U.S. SD graphite electrode market. One U.S. purchaser (***) and four importers indicated that the section 232 tariffs had not had an effect. Four importers and five purchasers indicated that they did not know.

*** U.S. producer/importers, one additional importer, and four purchasers indicated that the section 232 tariffs had caused an increase in U.S. demand for SD graphite electrodes, because the tariffs had caused increased demand for U.S.-produced steel. Two U.S. purchasers and one importer, ***, indicated that the section 232 tariffs had caused no change in U.S. demand. Four importers indicated that the section 232 tariffs had caused U.S. demand for SD graphite electrodes to fluctuate with no clear trend.

*** indicated that the section 232 tariffs had caused no change in U.S. prices for SD graphite electrodes, but also stated that prices rose in 2018 because of increased demand. *** indicated that the section 232 tariffs had resulted in fluctuating prices for SD graphite electrodes, which it characterized as “some impact.” Purchaser *** also indicated that the 232 tariffs had caused an increase in prices for SD graphite electrodes, but also added that prices increased substantially from the end of 2016 to mid-2017 (before the section 232 tariffs went into effect). Three purchasers and one importer, ***, stated that the section 232 tariffs had caused no change in the price of SD graphite electrodes, while one purchaser and importer *** stated that they had caused a decrease. *** elaborated that SD graphite electrode prices had decreased since 2018 due to needle coke availability (see Part V). Additionally, one purchaser and four importers stated that the section 232 tariffs had caused fluctuations in price with no clear trend. Purchasers that reported limited effects of the section 232 tariffs cited global demand, other market factors, and their own long-term contracts as reasons that the effect was limited.

Impact of section 301 tariffs

In June 2018, USTR announced a section 301 investigation in response to Chinese trade practices, and effective September 2018, SD graphite electrodes were included in a list of products subject to an additional 10 percent duty. (See Part I).

Market participants described varying effects of the section 301 tariffs, which came into effect a year after the section 232 tariffs. Additionally, when the section 301 tariffs came into effect, U.S. SD graphite electrode consumption was peaking, rather than still increasing (as in 2017 for the section 232 tariffs). *** U.S. producer/importers, five additional importers, and two purchasers indicated that the imposition of the section 301 tariffs had an impact on the U.S. SD graphite electrode market. Three purchasers and two importers indicated that it did not, and four purchasers and three importers did not know.

U.S. producer/importer *** indicated that the section 301 tariffs caused U.S. supply of SD graphite electrodes to ***, Chinese supply to *** (in the U.S. market), and nonsubject-country supply to ***. It continued that the section 301 tariffs supported *** demand for U.S. product, but did not have a *** on Chinese product. U.S. producer/importer *** stated that the section 301 tariffs caused U.S. and nonsubject-country supply to *** and Chinese supply to ***.

Among importers (other than ***), six indicated that the supply of U.S. product had not changed, two indicated that it decreased, and one indicated that it fluctuated. Four indicated that Chinese supply was unchanged, and four indicated that it decreased. Three indicated that nonsubject supply had increased, three indicated that it was unchanged, and two indicated that it had fluctuated.

U.S. purchaser *** indicated that the section 301 tariffs caused an increase in the supply of U.S.-produced SD graphite electrodes, a decrease in Chinese supply to the U.S. market, and an increase in nonsubject-country supply. U.S. purchaser *** indicated that U.S. supply had decreased, Chinese supply had not changed, and nonsubject-country supply had increased. It elaborated that the section 301 tariffs also increased U.S. steel production, and so U.S. steel producers bought more large diameter graphite electrodes (for higher margin production) at the expense of SD graphite electrodes.

U.S. producer/importer *** indicated that the section 301 tariffs *** affect U.S. prices, demand, or raw material costs for SD graphite electrodes. U.S. producer/importer *** indicated that the section 301 tariffs caused U.S. prices, demand, and raw material prices for SD graphite electrodes to ***. Among importers (other than ***), a majority indicated that demand and raw material costs were unchanged or increased because of the section 301 tariffs. Four indicated that the tariffs caused U.S. SD graphite electrode prices to rise, while two indicated that prices were unchanged, and two more indicated that prices had fluctuated. *** stated that the section 301 tariffs should have caused an increase in price, but instead, the price decreased because of other market conditions. The two responding purchasers generally reported that the section 301 tariffs had not affected SD graphite electrodes prices, demand, or raw material costs, except in that one purchaser indicated that SD graphite electrodes prices were falling.

Channels of distribution

U.S. producers and importers of SD graphite electrodes from nonsubject countries sell primarily to end users, as shown in table II-1.[3] The vast majority of imports from China reported in questionnaires received by the Commission were ***.[4] The only other importer that sold to distributors, ***.

[3] In general, graphite electrodes are sold directly to end users. In 2007, approximately *** percent of U.S. producers' U.S. commercial shipments of SD graphite electrodes were to end users, as were *** percent of U.S. commercial shipments of graphite electrodes in diameters larger than 16 inches. While comparable data were not available in the first review, the leading purchasers identified in the domestic producers' response to the notice of institution in that review were *** end users. Office of Investigations Memorandum INV-MM-036, *Small Diameter Graphite Electrodes from China, Inv. No. 731-TA-1143 (Review)*, Staff Report, p. I-11.

[4] See staff telephone interview with ***, November 21, 2019, and ***.

Table II-1
SD graphite electrodes: U.S. producers' and importers' share of reported U.S. commercial shipments, by sources and channels of distribution, 2016-18, January-September 2018, and January-September 2019

Item	Period				
	Calendar year			January-September	
	2016	2017	2018	2018	2019
	Share of reported shipments (percent)				
U.S. producers' U.S. commercial shipments of SD graphite electrodes:					
Distributors	***	***	***	***	***
End users	***	***	***	***	***
U.S. importers' U.S. commercial shipments of SD graphite electrodes from China:					
Distributors	See text	See text	See text	See text	See text
End users	See text	See text	See text	See text	See text
U.S. importers' U.S. commercial shipments of SD graphite electrodes from all other countries:					
Distributors	***	***	***	***	***
End users	***	***	***	***	***

Note.-- Most imports from China ***. See text for further details.

Source: Compiled from data submitted in response to Commission questionnaires.

Geographic distribution

U.S. producers and importers[5] reported selling SD graphite electrodes to all regions in the contiguous United States (table II-2). For U.S. producers, more than *** percent of their sales were between 101 and 1,000 miles from their facilities, with *** percent of sales were within 100 miles from their production facility. *** had *** percent of its sales more than 1,000 miles from its facilities, while *** had *** percent. Among importers, *** sold *** percent of its imports from China between 101 and 1,000 miles of its U.S. point of

[5] Table II-2 reports importer responses from ***. ***. ***.

shipment, while ***[6] sold *** percent of its imports within 100 miles of its U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent more than 1,000 miles.

Table II-2
SD graphite electrodes: Geographic market areas in the United States served by U.S. producers and importers

Region	U.S. producers	Importers of product from China
Northeast	***	***
Midwest	***	***
Southeast	***	***
Central Southwest	***	***
Mountain	***	***
Pacific Coast	***	***
Other[1]	***	***
All regions (except Other)	***	***
Reporting firms	2	4

[1] All other U.S. markets, including AK, HI, PR, and VI.

Source: Compiled from data submitted in response to Commission questionnaires.

Supply and demand considerations

U.S. supply

Table II-3 provides a summary of the supply factors regarding SD graphite electrodes from U.S. producers. No questionnaires were received from Chinese producers.

[6] ***. See staff telephone interview with ***, November 21, 2019.

Table II-3
SD graphite electrodes: Supply factors that affect the ability to increase shipments to the U.S. market

	Capacity (metric tons)		Capacity utilization (percent)		Ratio of inventories to total shipments (percent)		Shipments by market, 2018 (percent)		Able to shift to alternate products
Country	2016	2018	2016	2018	2016	2018	Home market shipments	Exports to non-U.S. markets	No. of firms reporting "yes"
United States	***	***	***	***	***	***	***	***	2 of 2

Note.—Responding U.S. producers accounted for all U.S. production of SD graphite electrodes in 2018. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Part I, "Summary Data and Data Sources."
Source: Compiled from data submitted in response to Commission questionnaires.

Domestic production

Based on available information, U.S. producers of SD graphite electrodes have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced SD graphite electrodes to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of substantial unused capacity. Producers reportedly can produce large diameter graphite electrodes on the same equipment on which they produce SD graphite electrodes, although *** indicated that switching would involve ***.

*** U.S. producers indicated that *** had not refused, declined, or been unable to supply SD graphite electrodes since January 1, 2014. ***.

Three U.S. purchasers indicated that they had had difficulty securing SD graphite electrodes since January 1, 2014. *** indicated that U.S. producers would not supply the size it uses. *** described a U.S. producer as closing. *** stated that in 2016-18, most U.S. producers refused supplying SD graphite electrodes in the quantity it needed, added a 10 percent premium to price, and delivered less than expected.

When asked to describe changes in the availability of U.S.-produced SD graphite electrodes since January 1, 2014, U.S. producer/importer *** indicated that ***, and U.S. producer Superior Graphite had exited the market. U.S. producer/importer *** described ***. Four other importers also listed the closure of Superior Graphite, and *** stated that it did not believe there

were any SD graphite electrodes made in the United States. Four importers stated that there had been no changes to the availability of U.S.-produced product.

*** anticipated producing a *** SD graphite electrodes, and *** anticipated ***. Ten other importers did not anticipate any changes in the availability of U.S.-produced product, although *** stated that future U.S. production is threatened by the return of Chinese product.

Seven purchasers indicated that the availability of U.S.-produced SD graphite electrodes had changed since January 1, 2014, citing the closure of one U.S. manufacturer, limited needle coke supply, and global demand increases in 2018. *** described U.S.-produced electrodes as almost disappearing from the market due to low margins and capacity restrictions. However, three purchasers indicated that the availability of U.S.-produced SD graphite electrodes had not changed since January 1, 2014. Eight purchasers did not anticipate any changes in the availability of U.S.-produced SD graphite electrodes, but *** did, noting that Tokai Carbon plans an increase in production from *** of annual capacity to ***.

Purchasers were asked to identify any improvements or changes in the U.S. SD graphite electrodes industry since January 1, 2014. Purchasers identified changes including various tariffs on China, increased prices, and a domestic supplier ceasing operations. Additionally, *** stated that U.S. manufacturers of SD graphite electrodes "took advantage" of the antidumping duty order to move production out of the United States to nonsubject countries, and stated that there has been no improvement to the U.S. SD graphite electrode industry.[7] *** added that it anticipated that the antidumping duty will benefit nonsubject country producers while U.S. producers focus on producing higher-margin large diameter graphite electrodes with the equipment that they could use to produce SD graphite electrodes.

Subject imports from China

Based on available information, producers of SD graphite electrodes from China have the ability to respond to changes in demand with large changes in the quantity of shipments of SD graphite electrodes to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the demonstrated capacity of Chinese producers to export substantial volumes to the rest of the world. (See Part IV.)

[7] Domestic interested parties denied these allegations, stating that ***. See domestic interested parties' posthearing brief, Exhibit 1, pp. 12-14.

Of the *** importers that handle Chinese material (***), two (***) indicated that they did not experience any difficulty in supplying SD graphite electrodes, while *** indicated that it did have difficulty meeting timely commitments, but did not specify whether this difficulty was for ***.

When asked to describe changes in the availability of Chinese SD graphite electrodes since January 1, 2014, U.S. producer/importer *** indicated that the antidumping duties had reduced imports from China. However, U.S. producer/importer *** stated that imports from China had increased. Five other importers indicated that there had been no change in the availability of Chinese product, while five did, citing fluctuating imports from China, increasing imports from China, or a shortage of imports from China.

*** added that it anticipated changes in the availability of Chinese product because several Chinese producers were adding capacity, while *** anticipated that any revocation of the antidumping duty order would lead to increased availability of Chinese product in the U.S. market. Six other importers did not anticipate changes in the availability of Chinese product, although *** anticipated an increase if the antidumping duties were removed, *** stated that there would be increases out of "necessity," and *** also anticipated an increase in Chinese supply.

Among U.S. purchasers, four indicated that the availability of Chinese SD graphite electrodes has not changed since January 1, 2014, while three indicated that it had, citing the U.S. antidumping duty order and Chinese internal demand as reducing the availability of Chinese product in the U.S. market. Seven purchasers did not anticipate any changes in the availability of Chinese SD graphite electrodes, but *** stated that there seemed to be more product available from China recently.

Imports from nonsubject sources

Nonsubject imports accounted for 88.1 percent of total U.S. imports in 2018. The largest sources of nonsubject imports in 2018 were (in descending order) Mexico, India, Ukraine, Russia, and Japan. Combined, these countries accounted for 87.6 percent of nonsubject imports in 2018. Eight importers of nonsubject-country product indicated that they had not experienced any supply constraints in supplying SD graphite electrodes.[8]

[8] As noted above, one importer ***, indicated that it did have difficulty meeting timely commitments, but did not specify whether this difficulty was for ***. Additionally, ***, indicated that it had experienced supply constraints because the prices of Chinese SD graphite electrodes were "too high."

When asked to describe changes in the availability of nonsubject-country SD graphite electrodes since January 1, 2014, U.S. producers and importers ***, as well as five other importers, indicated that there had not been any. Importer *** stated that imports had increased from India, Mexico, and Russia. Importer *** cited changes in the availability of product from India, Japan, and Mexico. Importer *** indicated that there had been a shortage of supply of nonsubject imports in the second half of 2017 and all of 2018. Nine importers (including ***) did not anticipate any changes in the availability of nonsubject-country product. *** anticipated increases in availability "out of necessity." Although *** indicated that it anticipated changes in the availability of nonsubject-country product, it did not specify what they were.

Among purchasers, four indicated that there had not been any changes in the availability of nonsubject-country SD graphite electrodes since January 1, 2014, but another four indicated there had. *** stated that 12-inch diameter product needed to be imported from other countries because there was no U.S. product manufactured at this size. *** attributed changes in nonsubject product availability to limited needle coke supply, *** to a 2017-18 shortage due to high Chinese market demand, and *** to an increase in global demand in 2018. *** reported that it had observed increased imports of SD graphite electrodes from Mexico, India, Japan, and Germany.

Six purchasers did not anticipate any change in the availability of SD graphite electrodes from nonsubject countries. One of these, ***, stated that prices for SD graphite electrodes are declining because of decreased demand. Two other purchasers indicated that they did anticipate changes: *** anticipated that the closure of a U.S. production facility and the antidumping duty will divert its purchases to major suppliers from India; and *** anticipated increasing purchases from India, Russia, and Germany.

Supply constraints

Six purchasers indicated that no suppliers of SD graphite electrodes had refused, declined, or been unable to supply product since January 1, 2014. Four did, with three specifying U.S. producers (discussed above). One of those three also indicated that foreign

suppliers had had difficulty committing to long term supply in 2016-18. An additional purchaser indicated that it had only had difficulties securing supply in 2018, but did not specify a source.[9]

New suppliers

Eight of ten responding purchasers indicated that no new suppliers of SD graphite electrodes entered the U.S. market since January 1, 2014. *** described *** as a new supplier, since ***. *** described purchasing from a new supplier from Ukraine. Nine U.S. purchasers did not expect additional entrants. However, *** stated that Indian producers are trying to enter the U.S. market.

Six purchasers indicated that they had not changed suppliers of SD graphite electrodes since January 1, 2014. Four indicated that they had. *** indicated that it switched to GES Graphite because of the closure of Superior Graphite. *** stated that it changed because of a lack of U.S. production, and instead sourced from nonsubject sources. *** indicated that it switched from Canadian supply to a domestic producer.

U.S. demand

Based on available information, the overall demand for SD graphite electrodes is likely to experience small changes in response to changes in price. The main contributing factors are the lack of substitute products and the small share of SD graphite electrodes in most of its end-use products.

End uses and cost share

As discussed in Part I of this report, and in the original investigation, the end uses for SD graphite electrodes are to generate heat in steel and metallurgical furnaces. *** responding U.S. producer/importers, ten other importers, and eight purchasers reported no changes in end uses.[10] *** responding U.S. producer/importers, nine other importers, and eight purchasers did not anticipate changes in end uses.

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[9] During the original investigation, 15 of 34 responding purchasers reported that one or more firms had refused or been unable to supply SD graphite electrodes since January 2005, with many attributing the supply shortages U.S. SD graphite electrode producers' capacity shortages and high steel demand worldwide, and with 11 purchasers identifying *** and 4 identifying ***. Office of Investigations Memorandum INV-GG-004, *Small Diameter Graphite Electrodes from China, Inv. No. 731-TA-1143 (Final),* Staff Report, at II-3.

[10] However, purchaser *** described one difference as the shutdown of Superior Graphite in 2017, leading to the lack of any U.S. production of 12-inch diameter SD graphite electrodes.

U.S. demand for SD graphite electrodes depends on the demand for U.S.-produced products made in steel mills and other foundries that use electric arc furnaces. Figure II-1 shows U.S. production of crude steel at mills using electric arc furnaces. Such production declined from *** short tons in early 2014 to less than *** short tons in late 2015. It then grew (with some fluctuations) to *** short tons by the end of 2019.

Figure II-1
U.S. crude steel production at electric arc furnace mills, 2014-2019

* * * * * * *

Source: ***.

In the original investigation, market participants indicated that SD graphite electrodes account for a small share of the cost of the downstream steel products that it is used to produce. Reported cost shares for some end uses were usually in the range of 1 to 5 percent.[11]

Business cycles

Both U.S. producer/importers, seven other importers, and six purchasers indicated that the SD graphite electrodes market was not subject to business cycles or conditions of competition (other than economy-wide conditions). Three importers and four purchasers stated that there were distinct business cycles or distinctive conditions of competition, with

[11] *Small Diameter Graphite Electrodes from China, Inv. No. 731-TA-1143 (Final)*, USITC Publication 4062, February 2009, p. II-5.

two purchasers citing the limited availability of needle coke. Importer *** stated that some of its competitors are circumventing the antidumping duties. Importer *** stated that tariffs play a "significant role" in the market. Purchaser *** stated that prices had increased and availability had decreased due to the antidumping duty order on China and Chinese internal demand. Purchaser *** stated that SD graphite electrodes are used to make products ultimately for the construction sector, and so end product sales increased in the summer months (when construction activity is higher).

Similarly, when asked if there had been any changes to the business cycle for SD graphite electrodes since January 1, 2014, four purchasers and three importers discussed issues with needle coke availability and with recent tariffs. Purchaser *** described the limited availability of needle coke as a change since 2014. Purchaser *** stated that needle coke supply had stabilized because of high inventories throughout the supply chain. Purchaser *** described a U.S. producer ceasing production, U.S. antidumping duties on Chinese products, and Chinese internal demand as increasing prices for SD graphite electrodes. Purchaser *** cited lower steel imports because of the section 232 tariffs as affecting U.S. demand for SD graphite electrodes. Importer *** stated that tariffs and high raw material costs had "not been kind" to end users, and importer *** described Chinese imports as increasing.

Demand trends

Purchasers were asked how demand for their firm's final products made with SD graphite electrodes had changed since January 1, 2014. As shown in table II-4, purchasers had a wide range of answers, with three indicating increased demand, one indicating no change, two indicating decreased demand, and four indicating fluctuating demand. However, nine of ten responding purchasers concurred that swings in demand for final products affected demand for SD graphite electrodes, with *** describing its end-use product sales and SD graphite electrode use as "directly related." *** explained that increased steel production meant increased SD graphite electrode use. *** indicated that they had opened new metal mills, or were planning to open new mills.

Market participants had a wide range of views on demand trends for SD graphite electrodes. *** reported fluctuating U.S. demand for SD graphite electrodes since January 1, 2014, while other importers and purchasers were more likely to report that U.S. demand had increased or not changed (table II-4). Four purchasers tied increased U.S. demand to increased U.S. steel production or the section 232 or 301 tariffs.

Table II-4
SD graphite electrodes: Firms' responses regarding U.S. demand

Item	Increase	No change	Decrease	Fluctuate
Demand in the United States: U.S. producers	***	***	***	***
Importers	2	6	1	3
Purchasers	4	2	---	1
Foreign producers	---	---	---	---
Anticipated future demand in the United States: U.S. producers	***	***	***	***
Importers	1	7	1	3
Purchasers	---	3	---	3
Foreign producers	---	---	---	---
Demand outside the United States: U.S. producers	***	***	***	***
Importers	3	5	1	2
Purchasers	1	1	1	2
Foreign producers	---	---	---	---
Anticipated future demand outside the United States: U.S. producers	***	***	***	***
Importers	2	6	1	3
Purchasers	---	3	---	2
Foreign producers	---	---	---	---
Demand for purchasers' final products: Purchasers	3	1	2	4

Source: Compiled from data submitted in response to Commission questionnaires.

Most firms expect U.S. demand to remain unchanged or fluctuate (without a clear increase or decrease) over the next two years. *** described U.S. demand for SD graphite electrodes as driven by fluctuations in U.S. steel production, and indicated that ***. However, purchaser *** stated that on the steel production side, no known new small diameter ladle furnaces were being installed. Purchasers *** expected economic conditions and/or steel production to remain flat in 2020, resulting in fluctuating or unchanged demand for SD graphite electrodes. Importer *** reported increased U.S. demand due to increased efficiency and an increase in the number of U.S. mini-mills. Importer *** also indicated that there had been increased productivity at U.S. and foreign steel mills, efficiency that has resulted in decreased demand for SD graphite electrodes.[12]

[12] See Part IV for information on demand outside the United States.

Substitute products

In the original investigation, firms indicated either that there were no substitutes for SD graphite electrodes, or that the only substitute would involve a larger shift in production methods, such as switching to a cupola furnace or using large diameter graphite electrodes. The first option was described as much less efficient, and the second as potentially very expensive as well as requiring new environmental permits. In additional comments in this review, purchaser *** stated that, with prices for all electrodes rising, suppliers had restricted their supply of SD graphite electrodes in order to produce large diameter graphite electrodes with higher yields and margins.

*** responding U.S. producer/importers, ten other importers, and ten purchasers indicated that there had not been any changes in substitutes for SD graphite electrodes since January 1, 2014. *** responding U.S. producer/importers, nine other importers, and ten purchasers did not anticipate that there would be any future changes in the substitutes for SD graphite electrodes. However, importer *** stated that induction furnace melting (a steel-production process that does not use SD graphite electrodes) is being used in other parts of the world successfully.

Substitutability issues

The degree of substitution between domestic and imported SD graphite electrodes depends upon such factors as relative prices, quality (e.g., grade standards, defect rates, etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, reliability of supply, product services, etc.). Most responding firms described U.S. and Chinese product as frequently or always interchangeable. However, purchasers also described U.S. product as superior to Chinese product in some purchasing factors, and some purchasers indicated that factors other than price were important. Based on available data, staff believes that there is a moderately high degree of substitutability between domestically produced SD graphite electrodes and SD graphite electrodes imported from subject sources.

Lead times

SD graphite electrodes primarily are produced-to-order. Among U.S. producers, GrafTech reported that *** percent of its commercial shipments were produced-to-order, with lead times averaging *** days. The remaining *** percent of its commercial shipments came from inventories, with lead times averaging *** days. Tokai Carbon reported that *** percent of its commercial shipments were produced-to-order, with lead times averaging *** days.

Among importers of Chinese product, *** reported that *** percent of its commercial shipments were produced-to-order, with lead times of *** days. ***, indicated that *** percent of its sales were from inventory (with lead times of *** days), *** percent from the foreign producer's inventory (with lead times of *** days), and *** percent produced-to-order (with lead times of *** days). *** indicated that *** percent of its sales were from foreign inventories, with lead times of *** days.

Knowledge of country sources

Seven purchasers indicated they had marketing/pricing knowledge of domestic product, three of Chinese product, and nine of product from nonsubject countries. ***, which did not indicate experience with or information about U.S.-produced product, stated that the primary sources of SD graphite electrodes in the United States are India, Germany, Mexico, and, to a lesser extent, China.

As shown in table II-5, purchasers reported a wide range of answers when asked how often they and their customers make purchasing decisions based on the producer or country of origin. *** stated that it prefers to purchase U.S.-produced products. However, a majority of responding purchasers reported that their customers never make purchasing decisions based on the producer or country of origin of the SD graphite electrodes used. *** stated that it makes decisions based on quality and availability, and *** stated that it does so based on electrode quality, price, and raw material quality.

Table II-5
SD graphite electrodes: Purchasing decisions based on producer and country of origin

Purchaser/customer decision	Always	Usually	Sometimes	Never
Purchaser makes decision based on producer	3	2	4	1
Purchaser's customers make decision based on producer	---	---	1	4
Purchaser makes decision based on country	3	2	2	2
Purchaser's customers make decision based on country	---	---	1	4

Source: Compiled from data submitted in response to Commission questionnaires.

Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for SD graphite electrodes were quality (10 firms), price (10 firms), and availability (7 firms) as shown in table II-6.[13]

Table II-6
SD graphite electrodes: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third	Total
Quality	5	3	2	10
Price	2	5	3	10
Availability	2	1	4	7
Traditional supplier	1	--	--	1
Delivery	--	1	1	2
Technical support	--	--	1	1

Note.—Purchasers also named traditional supplier and delivery time as additional factors (i.e., not top three), as well as the origin of the needle coke used to produce the SD graphite electrodes.

Source: Compiled from data submitted in response to Commission questionnaires.

Half of purchasers (5 of 10) reported that they sometimes purchase the lowest-priced product, while four stated that they usually do, and one stated that it never does.

Purchasers were asked if certain grades, sizes or types of SD graphite electrodes were only available from certain country sources. Seven answered that they were not. However, *** stated that diameters 16 inches and below are often available from China, Germany, India, Mexico, and Russia. Additionally, *** stated that the (unspecified) size that it uses is not available from U.S. producers.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table II-7). The factors rated as very important by more than half of responding purchasers were availability, price, product consistency, quality meets industry standards, quality exceeds industry standards, and reliability of supply.

[13] When asked what characteristics they consider when determining the quality of SD graphite electrodes, seven purchasers indicated that consumption rate (how many pounds of steel can be produced from a SD graphite electrode) was an important characteristic. Purchasers also cited other characteristics including thermal expansion, bending strength, density, and conformance to ultra high-powered specifications.

Table II-7
SD graphite electrodes: Importance of purchase factors, as reported by U.S. purchasers, by factor

Factor	Very important	Somewhat important	Not important
Availability	10	---	---
Delivery terms	2	8	---
Delivery time	5	4	1
Discounts offered	3	6	1
Minimum quantity requirements	1	6	3
Packaging	2	6	2
Payment terms	1	9	---
Price	9	1	---
Product consistency	9	1	---
Product range	---	7	3
Quality meets industry standards	9	1	---
Quality exceeds industry standards	6	4	---
Reliability of supply	9	1	---
Technical support/service	5	5	---
U.S. transportation costs	---	6	4

Source: Compiled from data submitted in response to Commission questionnaires.

Supplier certification

Eight of ten responding purchasers require their suppliers to become certified or qualified to sell SD graphite electrodes to their firm. Only *** did not. Three purchasers reported that the time to qualify a new supplier was 30 days, one reported 14 days, and one reported 120 days. Qualification involved trial runs that examined the consumption rate, conductivity, tapering, thermal expansion, bending strength, and density of the material. Some purchasers also examined the reliability of the supplier and its supply chain.

Nine purchasers reported that no domestic or foreign supplier had failed in its attempt to qualify product, or had lost its approved status since January 1, 2014, although *** added that it had not attempted to qualify any new suppliers during the period. Only *** stated that it had rejected any suppliers, explaining that material from *** as well as from *** had performed poorly.

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since January 1, 2014 (table II-8). A plurality of responding purchasers reported increased purchases of U.S. product, and a majority of responding purchasers reported increased purchases of product from nonsubject countries. While a majority of purchasers reported not purchasing Chinese product, two reported decreased purchases of Chinese product, and two reported constant purchases of Chinese product. As reasons for shifts in

purchasing patterns, purchasers cited increased demand from steel production, Superior Graphite's shutdown, and increased prices of, or performance problems with, Chinese product.

Table II-8
SD graphite electrodes: Changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Did not purchase	Decreased	Increased	Constant	Fluctuated
United States	2	1	4	2	1
China	5	2	---	2	---
Other	3	1	5	---	1

Source: Compiled from data submitted in response to Commission questionnaires.

Importance of purchasing product from particular countries

Nine purchasers reported that all of their purchases did not require purchasing U.S.-produced product. One purchaser did not answer the question.

Purchasers were asked if they or their customers ever specifically order SD graphite electrodes from one country in particular over other sources of supply. Four answered that they did not, while six responded that they did. Of those six, *** reported it prefers Chinese product for its "proven quality." *** indicated that it prefers U.S. product, but described Mexican product as working "okay," and added that it had not purchased Chinese product (which it described as not working as well) since 2009. Four other purchasers also indicated a preference for U.S. product, citing quality, on-time delivery, and technical support. *** stated that adding new suppliers would require expensive trials. ***, which indicated it does not order SD graphite electrodes from one country over other sources of supply, stated that it purchases based on availability, pricing, and payment terms.

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing SD graphite electrodes produced in the United States, China, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 15 factors (table II-9) for which they were asked to rate the importance. A majority of responding purchasers rated U.S. product as superior or comparable to Chinese and nonsubject-country product on all factors except price. Responding purchasers were most likely to find U.S. product superior to Chinese product on delivery time and technical support/service.

Table II-9
SD graphite electrodes: Purchasers' comparisons between U.S.-produced and imported product

Factor	U.S. vs. China			U.S. vs. all other countries			China vs. all other countries		
	S	C	I	S	C	I	S	C	I
Availability	3	3	--	3	5	--	1	3	--
Delivery terms	3	3	--	4	3	--	1	3	--
Delivery time	5	1	--	4	2	1	1	3	--
Discounts offered	--	5	1	--	5	2	2	2	--
Minimum quantity requirements	--	5	--	--	7	--	1	3	--
Packaging	3	2	--	2	5	--	1	3	--
Payment terms	1	4	--	1	6	--	1	3	--
Price[1]	1	2	3	2	2	3	2	1	1
Product consistency	3	3	--	3	5	--	2	2	1
Product range	1	4	1	--	6	2	2	2	--
Quality meets industry standards	2	4	--	2	5	1	1	3	1
Quality exceeds industry standards	2	4	--	3	3	1	1	3	--
Reliability of supply	3	2	1	3	3	2	1	3	--
Technical support/service	4	2	--	5	2	1	1	3	1
U.S. transportation costs[1]	2	3	1	1	6	1	1	3	--

[1] A rating of superior means that price/U.S. transportation costs is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Note.--S=first listed country's product is superior; C=both countries' products are comparable; I=first list country's product is inferior.

Source: Compiled from data submitted in response to Commission questionnaires.

Comparison of U.S.-produced and imported SD graphite electrodes

In order to determine whether U.S.-produced SD graphite electrodes can generally be used in the same applications as imports from China, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-10, most U.S. producers, importers, and purchasers described U.S., Chinese, and nonsubject-country product as always or frequently interchangeable.

Table II-10
SD graphite electrodes: Interchangeability between SD graphite electrodes produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject country: U.S. vs. China	***	***	***	***	***	***	***	***	4	2	1	--
Nonsubject countries comparisons: U.S. vs. nonsubject	***	***	***	***	***	***	***	***	4	3	1	--
China vs. nonsubject	***	***	***	***	***	***	***	***	3	3	--	--

Note.—A=Always, F=Frequently, S=Sometimes, N=Never.
Note.—This table includes data from U.S. producer/importers *** in both the producers and importer sections. Their answers were the same as U.S. producers as they were as importers.

Source: Compiled from data submitted in response to Commission questionnaires.

In additional comments, purchaser *** stated that the interchangeability of SD graphite electrodes is affected by many factors, including tip shape and pin placement. Similarly, importer *** stated that pin thread and socket sizes do vary by country source. Importer *** stated that it has not observed any U.S.-produced SD graphite electrodes available in the U.S. market.

As can be seen from table II-11, six responding purchasers reported that domestically produced product always met minimum quality specifications, while one responding purchaser reported that the Chinese SD graphite electrodes always met minimum quality specifications. However, a majority of purchasers described SD graphite electrodes from any source as at least usually meeting minimum quality specifications.

Table II-11
SD graphite electrodes: Ability to meet minimum quality specifications, by source[1]

Source	Always	Usually	Sometimes	Rarely or never
United States	6	3	--	--
China	1	4	--	2
Other	2	4	1	1

[1] Purchasers were asked how often domestically produced or imported SD graphite electrodes meets minimum quality specifications for their own or their customers' uses.

Source: Compiled from data submitted in response to Commission questionnaires.

In addition, U.S. producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of SD graphite electrodes from the United States, subject, or nonsubject countries. As seen in table II-12, U.S. producers and most importers described factors other than price as never being significant in sales of SD graphite electrodes from the United States as compared to those from China. However, a plurality of responding purchasers described such factors as always being significant (while half of responding purchasers described such differences as sometimes or never significant).

Table II-12
SD graphite electrodes: Significance of differences other than price between SD graphite electrodes produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject countries:												
U.S. vs. China	***	***	***	***	1	---	3	6	3	1	2	2
Nonsubject countries comparisons:												
U.S. vs. nonsubject	***	***	***	***	1	---	3	7	1	2	3	2
China vs. nonsubject	***	***	***	***	1	---	2	7	1	2	2	2

Note.--A = Always, F = Frequently, S = Sometimes, N = Never.
Note.—This table includes data from U.S. producer/importers *** in both the producers and importer sections. Their answers were the same as U.S. producers as they were as importers.

Source: Compiled from data submitted in response to Commission questionnaires.

In additional comments, purchaser *** stated that U.S. producers always provide better technical support than suppliers of imported product. Purchaser *** stated that quality is the most important limiting factor when sourcing from certain countries, and that Chinese product usually has the worst record among product sources, due to breakage, cracking, and other issues. Purchaser *** described U.S. product as always being better quality than product from other countries. Importer *** stated that country of origin does not matter; the only concerns it has are high quality at a competitive price.

Elasticity estimates

This section discusses elasticity estimates; parties were encouraged to comment on these estimates in their prehearing or posthearing briefs. None did so.

U.S. supply elasticity

The domestic supply elasticity[14] for SD graphite electrodes measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of SD graphite electrodes. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced SD graphite electrodes. Analysis of these factors above indicates that the U.S. industry is likely to be able to increase or decrease greatly shipments to the U.S. market; an estimate in the range of 4 to 8 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for SD graphite electrodes measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of SD graphite electrodes. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the SD graphite electrodes in the production of any downstream products. Based on the available information, the aggregate demand for SD graphite electrodes is likely to be very inelastic; a range of -0.25 to -0.5 is suggested.

[14] A supply function is not defined in the case of a non-competitive market.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[15] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/ discounts/ promotions, etc.). Most market participants described domestic and imported products as at least usually interchangeable, although purchasers regarded U.S. product as superior to Chinese product in some purchasing factors. Additionally, some purchasers and importers described U.S.-produced SD graphite electrodes as not available in smaller diameters.[16] Based on available information, the elasticity of substitution between U.S.-produced SD graphite electrodes and imported SD graphite electrodes is likely to be in the range of 2 to 5, depending on the importance and size of the smaller-diameter SD graphite electrode market, for which U.S. producers are not suppliers.

[15] The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject products (or vice versa) when prices change.

[16] However, domestic interested parties described the 12-inch diameter segment of the SD graphite electrode market as ***. Domestic interested parties' posthearing brief, Exhibit 1, p. 12.

Part III: Condition of the U.S. industry

Overview

The information in this section of the report was compiled from responses to the Commission's questionnaires. Two firms, which accounted for all known U.S. production of SD graphite electrodes after the closure of Superior in April 2016, supplied information on their operations involving SD graphite electrodes. Table III-1 and the remainder of this section summarize industry events and company changes based on publicly available information.

Table III-1
SD graphite electrodes: Important industry events, since 2014

Item / Firm	Recent events
Acquisitions/ownership	
August 2015	GrafTech is purchased by an affiliate of Brookfield Asset Management.
October 2017	Showa Denko completes acquisition of SGL GE, with intention of selling U.S. plants to Tokai Carbon.
November 2017	Tokai Carbon completes acquisition of former SGL plants.
April 2018	GrafTech initial public offering.
Closures:	
April 2016	Superior announces that it will lay off 42 of 70 workers at its plant in Russellville, Arkansas, and begins the process of idling production.
2nd Quarter 2016	GrafTech's St. Marys, Pennsylvania, facility is idled with the exception of machining some products produced at other plants.
June 2017	Poco Graphite (a subsidiary of Entegris) purchases the Superior plant in Russellville, with the intention of producing products other than graphite electrodes.
Other:	
1st Quarter 2018	GrafTech's St. Marys facility starts graphitizing a limited number of electrodes from its Monterrey, Mexico facility.
November 2019	GrafTech announced a $20 million investment to expand production at its St. Marys plant.

Sources: See narrative below.

SGL/Tokai Carbon

SGL Group, the parent company of SGL, announced in November 2014 that it was combining its Graphite & Carbon Electrodes and Cathodes & Furnace Linings businesses into a single business unit called Performance Products ("PP"). SGL Group further decided, in July 2015, to separate its PP business unit into a "separate legal entity" within the company. The firm noted that "the business unit will adapt its business model to the changed market conditions especially in graphite electrodes." Further, SGL stated that the "SGL Group is facilitating participation in potential future consolidation scenarios in the graphite electrode industry." This separation of the PP business was completed in June 2016, with the firm reiterating the potential for the business unit to be consolidated. Referring to the graphite electrode business specifically, SGL indicated that the "overcapacities in the steel industry have exposed it to substantial price erosion."[1]

In October 2016, Showa Denko reached an agreement to acquire the graphite electrode portion[2] of the PP business unit. Show Denko noted that the "business environment in the graphite electrode industry remains challenging due to weak demand and severe competition." Showa Denko, which already operated a graphite electrode production location in the United States (and additional graphite electrode production plants in Japan and China), decided to acquire SGL's business (with production in Austria, Germany, Malaysia, Spain, and the United States) in order to increase the firm's competitiveness. On September 28, 2017, SGL announced that U.S. Department of Justice approved the sale, with the condition that Showa Denko sell the

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[1] *SGL Group webpage*, "SGL Group Completes Carve-out of its Performance Products Business Unit," News release, June 2, 2016, https://www.sglcarbon.com/en/company/press/press-information/press-report/sgl-group-completes-carve-out-of-its-performance-products-business-unit/, retrieved July 3, 2019; *SGL Group webpage*, "SGL2015: Further Streamlining of Organization to Three Business Units," News release, November 4, 2014, https://www.sglcarbon.com/en/company/press/press-information/press-report/sgl2015-further-streamlining-of-organization-to-three-business-units/, retrieved July 3, 2019; *SGL Group webpage*, "SGL Carbon SE," News release, July 7, 2015, https://www.sglcarbon.com/en/company/press/press-information/press-report/sgl-carbon-se-board-of-management-and-supervisory-board-decide-on-accelerated-growth-strategy-for-t/, retrieved July 3, 2019.

[2] The remainder of SGL Group's PP business unit was sold to Triton in 2017. *SGL Group webpage*, "Sale of the Cathodes, Furnace Linings and Carbon Electrodes (CFL/CE) Business to Triton Completed," News release, November 2, 2017, https://www.sglcarbon.com/en/company/press/press-information/press-report/sale-of-the-cathodes-furnace-linings-and-carbon-electrodes-cflce-business-to-triton-completed/, retrieved July 3, 2019.

SGL facilities used to produce SD graphite electrodes in Hickman, Kentucky, and Ozark, Arkansas, "for competitive reasons."[3]

On September 28, 2017, Tokai Carbon (a graphite electrode producer with plants in Germany and Japan at that time) announced its intention to acquire SGL GE Carbon Holding LLC, and thereby SGL's U.S. production sites that Showa Denko agreed to divest. Tokai Carbon noted that the "acquisition will enable Tokai to acquire a manufacturing base in North America, thereby increasing the company's presence in the world largest EAF market and building a solid business base as a global competitor." The firm stated "{a}lthough Tokai Carbon supplies products through a sales subsidiary, it has long struggled to establish a strong production and sales structure in the North American market." Tokai completed the acquisition on November 7, 2017, and changed the name to Tokai Carbon Holding GE LLC. The acquired business had sales of $80.8 million in 2016.[4]

Tokai Carbon noted that it planned to shift some production from Japan to the United States "to optimize the company's global production structure and improve cost competitiveness." The firm shifted 40 percent of its production capacity in Japan from graphite electrodes to lithium-ion battery anode material in 2015, and indicated that the current acquisition would enable the company to meet long-term demand for lithium-ion material.[5]

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[3] *Showa Denko K.K. webpage*, "Acquisition of the Graphite Electrode Business of SGL Carbon SE," News release, October 20, 2016, https://www.sdk.co.jp/assets/files/english/news/2016/20161020_sdknewsrelease1_e.pdf, retrieved July 3, 2019; *SGL Group webpage*, "SGL Group Signed Agreement to Sell its Graphite Electrode Business to Showa Denko (SDK)," News release, October 20, 2016, https://www.sglcarbon.com/en/company/press/press-information/press-report/sgl-group-signed-agreement-to-sell-its-graphite-electrode-business-to-showa-denko-sdk-1/, retrieved July 3, 2019; Santee Cooper, "Showa Denko: Growing in Ridgeville," *PowerSource*, Winter 2013, p. 16, https://dc.statelibrary.sc.gov/bitstream/handle/10827/16945/SC_Powersource_2013_Winter.pdf?sequence=1&isAllowed=y, retrieved July 9, 2019; *SGL Group webpage*, "Antitrust Authorities Approve Sale of SGL Group's Graphite Electrode Business to Showa Denko (SDK)," News release, September 28, 2017, https://www.sglcarbon.com/en/company/press/press-information/press-report/antitrust-authorities-approve-sale-of-sgl-groups-graphite-electrode-business-to-showa-denko-sdk/, retrieved July 3, 2019.

[4] *Tokai Carbon webpage*, "Tokai Carbon to Acquire Shares of U.S. Subsidiary of SGL GE, a Graphite Electrode Manufacturer," News release, September 28, 2017, https://ssl4.eir-parts.net/doc/5301/tdnet/1516376/00.pdf, retrieved July 3, 2019; *Tokai Carbon webpage*, "Tokai Carbon Completes Acquisition of Shares in SGL GE Carbon Holding LLC, a Manufacturer of Graphite Electrodes, and Changes Company Name," News release, November 8, 2017, https://ssl4.eir-parts.net/doc/5301/tdnet/1528601/00.pdf, retrieved June 17, 2019.

[5] *Tokai Carbon webpage*, "Tokai Carbon to Acquire Shares of U.S. Subsidiary of SGL GE, a Graphite Electrode Manufacturer," News release, September 28, 2017, https://ssl4.eir-parts.net/doc/5301/tdnet/1516376/00.pdf, retrieved July 3, 2019.

Tokai Carbon maintains graphite electrode production in Hickman, Kentucky, and Ozark, Arkansas. The graphite electrodes are formed at the Hickman plant, then sent to the Ozark plant for additional processing and finishing. Tokai Carbon produces 14 and 16 inch SD graphite electrodes in the United States.[6]

GrafTech

GrafTech reported ***. However, in April 2010, GrafTech acquired 100 percent interest in C/G Electrodes LLC, with its production facility for graphite electrodes greater than 16 inches in diameter. ***.[7]

In August 2015, GrafTech was acquired by an affiliate of Brookfield Asset Management ("Brookfield"). Brookfield closed three of six graphite electrode plants globally, and increased production capacity at the remaining plants. Under Brookfield, GrafTech also shifted to selling a majority of production through long-term contracts. In April 2018, GrafTech was listed on the New York Stock Exchange, with a $525 million initial public offering.[8]

GrafTech's U.S. graphite electrode plant in St. Marys, Pennsylvania "was temporarily idled effective the second quarter of 2016 except for the machining of semi-finished products sourced from other plants."[9] GrafTech indicated that the facility was idled in order to "align with overall demand."[10] The manager of the facility stated that "GrafTech customers in the

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[6] *Tokai Carbon webpage*, https://www.tokaicarbonusa.com/graphite-electrodes, retrieved July 3, 2018; *Business View Magazine*, "Tokai Carbon GE LLC–A Great Combination," August 2, 2018, https://businessviewmagazine.com/tokai-carbon-ge-llc/, retrieved July 3, 2019.

[7] First review confidential report, pp. I-13 and I-16 note 34.

[8] Franklin, Joshua, "GrafTech IPO Nets Brookfield Smaller-than-Expected Windfall: Source," *Reuters*, April 18, 2018, https://www.reuters.com/article/us-graftech-ipo/graftech-ipo-nets-brookfield-smaller-than-expected-windfall-source-idUSKBN1HP37C, retrieved June 17, 2019; *Private Equity International*, "Brookfield Asset Management: Graftech International," October 2018, p. 18, http://privateequityinternational.com/wp-content/uploads/2018/09/PEI169OPEX_supp_2018_digi.pdf, retrieved July 9, 2019; McCafferty, Rachel Abbey, "Brookfield Asset Management Affiliate Completes Acquisition of GrafTech International," *Crain's Cleveland Business*, August 17, 2015, https://www.crainscleveland.com/article/20150817/NEWS/150819822/brookfield-asset-management-affiliate-completes-acquisition-of, retrieved June 17, 2019.

[9] *GrafTech,* "Graftech Reports First Quarter 2019 Results," News release, May 1, 2019, https://www.graftech.com/investors/news/news-details/2019/GrafTech-Reports-First-Quarter-2019-Results/default.aspx, retrieved June 17, 2019.

[10] *GrafTech,* Form 10-K, Annual Filing to the Securities and Exchange Commission for the fiscal year ended December 31, 2016, February 27, 2017, p. 9, https://www.sec.gov/Archives/edgar/data/931148/000093114817000007/a201610-k.htm, retrieved July 9, 2019.

steel industry are experiencing abnormally low demand for their products and this downturn has negatively impacted their need for graphite electrodes." He further indicated that "we will be curtailing the majority of operations at the St. Marys plant for the foreseeable future," and that "we will maintain the plant equipment for future start-up."[11]

GrafTech subsequently reported that in the first quarter of 2018 the "St. Marys facility began graphitizing a limited amount of electrodes sourced from {its} Monterrey, Mexico facility."[12] In February 2019, the firm reported that the "finishing operations of our St. Marys plants are currently operating at varying levels to support overall flexibility of our manufacturing footprint. We will ramp up production at St. Marys if required by the market at any point in the future. St. Marys can be thought of as essentially the equivalent of a peaking plant, and we will operate in that fashion." The firm further stated that "We will use St. Marys to allow us flexibility and variability. We expect the degree to which we run that will move up and down based upon the market dynamics, not unlike that of, again, in the analogy of a peaking plant."[13]

The firm reiterated in May 2019 that the "finishing operations at our St. Marys plants are running to support overall flexibility within our manufacturing footprint, market conditions don't suggest the need for restart for additional capacity anytime soon."[14] During the period from January 2016 to September 2019, GrafTech reported production of *** graphite electrodes, as well as *** graphite electrodes.[15] In November 2019, the firm announced that it would invest $20 million to expand production at its St. Marys plant, which would create at least 36 new jobs.[16]

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[11] *The Bradford Era*, "GrafTech to Decrease Production at St. Marys Plant," February 2, 2016, http://www.bradfordera.com/news/graftech-to-decrease-production-at-st-marys-plant/article_5988eae0-c942-11e5-82f7-afd3381ef0df.html, retrieved July 9, 2019.

[12] *GrafTech webpage*, "Graftech Reports First Quarter 2019 Results," News release, May 1, 2019, https://www.graftech.com/investors/news/news-details/2019/GrafTech-Reports-First-Quarter-2019-Results/default.aspx, retrieved June 17, 2019.

[13] *GrafTech*, "Q4 2018 GrafTech International Ltd Earnings Call – Final," *FD (Fair Disclosure) Wire*, February 8, 2019, https://advance.lexis.com, retrieved July 9, 2019.

[14] *GrafTech*, "GrafTech International Ltd. (EAF) Q1 2019 Earnings Call Transcript," *Motley Fool Transcribers*, May 1, 2019, https://www.fool.com/earnings/call-transcripts/2019/05/01/graftech-international-ltd-eaf-q1-2019-earnings-ca.aspx, retrieved July 9, 2019.

[15] ***.

[16] Area Development, "GrafTech USA Expands in St. Marys, Pennsylvania," November 8, 2019, https://www.areadevelopment.com/newsItems/11-8-2019/graftech-international-holdings-st-marys-elk-county-pennsylvania.shtml, retrieved December 11, 2019.

Superior

In April 2016, Superior announced that it would lay off 42 of about 70 workers at its Russellville, Arkansas plant and begin the process of idling production of electrodes. According to media reports, the firm produced 200 to 450 mm (8 to 18 inch) graphite electrodes. The firm planned to complete work on goods currently under production and "necessary orders." [17]

According to a company memorandum, there were "several factors that played into this decision and they are: the continued importing of low cost electrode and specialty graphite products; the continued depressed rates of steel production, and low capacity utilization have created an environment such that we cannot effectively compete in these markets with these conditions." The memorandum further indicated that "{d}espite the significant efforts by many people, and continued investment allocated by the Board of Directors, we have been unable to achieve the necessary turnaround to stem the financial losses, or gain market share." Superior indicated that it would make a decision on whether to restart operations when market conditions improve. In June 2017, however, Superior sold the plant to Poco Graphite (a subsidiary of Entegris), which planned to produce high-performance materials for applications such as semiconductors and aerospace at the plant.[18]

[17] *Talk Business & Politics*, "Russellville Plant Shedding More than Half of Workforce, Company May Idle Plant," April 6, 2016, https://talkbusiness.net/2016/04/russellville-plant-shedding-more-than-half-of-workforce/, retrieved June 17, 2019; *The Courier*, "Superior Graphite Closing Russellville Plant," April 6, 2016, https://couriernews.com/Content/Default/Business/Article/Superior-Graphite-closing-Russellville-plant/-3/64/15723, retrieved June 17, 2019.

[18] *Talk Business & Politics*, "Russellville Plant Shedding More than Half of Workforce, Company May Idle Plant," April 6, 2016, https://talkbusiness.net/2016/04/russellville-plant-shedding-more-than-half-of-workforce/, retrieved June 17, 2019; *Talk Business & Politics*, "Entegris Acquires Superior Graphite Plant in Russellville," June 30, 2017, https://talkbusiness.net/2017/06/entegris-acquires-superior-graphite-plant-in-russellville/, retrieved June 17, 2019.

Changes experienced by the industry

Domestic producers were asked to indicate whether their firm had experienced any plant openings, relocations, expansions, acquisitions, consolidations, closures, or prolonged shutdowns because of strikes or equipment failure; curtailment of production because of shortages of materials or other reasons, including revision of labor agreements; or any other change in the character of their operations or organization relating to the production of SD graphite electrodes since 2014. Both of the domestic producers indicated that they had experienced such changes; their responses are presented in table III-2.

Table III-2
SD graphite electrodes: Changes in the character of U.S. operations since January 1, 2014

Item / Firm	Reported changed in operations
Plant closings:	
***	***
Expansions:	
***	***
Acquisitions:	
***	***
Prolonged shutdowns or curtailments:	
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

In addition, Superior, as noted above, closed its SD graphite electrodes plant in 2016 and sold the plant in 2017 to Poco Graphite, which planned to produce goods other than graphite electrodes. ***.[19]

[19] ***.

Anticipated changes in operations

The Commission asked domestic producers to report anticipated changes in the character of their operations relating to the production of SD graphite electrodes. Their responses appear in table III-3. U.S. producer ***.

Table III-3
SD graphite electrodes: Anticipated changes in the character of U.S. operations

Item / Firm	Reported changed in operations
***	***
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Production-related activities

As discussed above, GrafTech finishes graphite electrodes at its St. Marys facility, engaging in both machining and graphitizing. Table III-4 presents information on U.S. producers' assessments on the complexity of finishing activities. Both producers indicated the complexity *** on a 5-point scale. ***.

Table III-4
SD graphite electrodes: U.S. producers' rating of the complexity and importance of finishing activities, since January 1, 2014

	Complexity rating				
Item	1 Not at all complex	2	3	4	5 Very complex
***	***	***	***	***	***
***	***	***	***	***	***
	Narrative responses to sufficient production activities question				
Capital investments	***				
Technical expertise	***				
Value added	*** ***				
Employment	*** ***				
Quantity, type, and source of parts	***				
Costs and activities	***				

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. production, capacity, and capacity utilization

Table III-5 and Figure III-1 present U.S. producers' production, capacity, and capacity utilization. As presented in the table III-5, U.S. producers' capacity recovered ***.

Domestic production increased from 2016 to 2017 by *** metric tons while one producer ***. From 2017 to 2018 domestic production increased by *** metric tons as ***. Production of SD graphite electrodes was lower in January-September 2019 than in January-September 2018, although overall production of graphite electrodes of all sizes was higher (see table III-6).

Average capacity utilization increased in 2017 and 2018 reflecting overall production growth amid fluctuating capacity. Capacity utilization was *** percentage points lower in January-September 2019 than January-September 2018.

Table III-5
SD graphite electrodes: U.S. producers' production, capacity, and capacity utilization, 2016-18, January-September 2018, and January-September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Capacity (metric tons)				
***	***	***	***	***	***
***	***	***	***	***	***
Total capacity	***	***	***	***	***
	Production (metric tons)				
***	***	***	***	***	***
***	***	***	***	***	***
Total production	***	***	***	***	***
	Capacity utilization (percent)				
***	***	***	***	***	***
***	***	***	***	***	***
Average capacity utilization	***	***	***	***	***

Note: Staff modified U.S. producer *** overall and allocated capacity levels based on the periods when the firm was actively producing graphite electrodes.

Source: Compiled from data submitted in response to Commission questionnaires.

Figure III-1
SD graphite electrodes: U.S. producers' production, capacity, and capacity utilization, 2016-18, January-September 2018, and January-September 2019

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-6 presents U.S. producers' overall capacity on equipment used to produce SD graphite electrodes. This equipment is *** to the production of graphite electrodes; *** produces *** on this equipment. *** has produced graphite electrodes less than 14" in diameter since ***, and even *** graphite electrodes are a *** of production, *** in quantity by *** graphite electrodes. Graphite electrodes *** in diameter represent the *** of production on shared equipment.

Table III-6
SD graphite electrodes: U.S. producers' overall capacity and production on the same machinery as SDGE on same machinery, 2016-18, January-September 2018, and January-September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Quantity (metric tons)				
Overall capacity	***	***	***	***	***
Production: Graphite electrodes < 14"	***	***	***	***	***
Graphite electrodes 14" to 16"	***	***	***	***	***
Graphite electrodes <= 16"	***	***	***	***	***
Graphite electrodes > 16" and < 20"	***	***	***	***	***
Graphite electrodes >=20"	***	***	***	***	***
Graphite electrodes > 16"	***	***	***	***	***
Total production	***	***	***	***	***
	Ratios and shares (percent)				
Capacity utilization	***	***	***	***	***
Production: Graphite electrodes < 14"	***	***	***	***	***
Graphite electrodes 14" to 16"	***	***	***	***	***
Graphite electrodes <= 16"	***	***	***	***	***
Graphite electrodes > 16" and < 20"	***	***	***	***	***
Graphite electrodes >=20"	***	***	***	***	***
Graphite electrodes > 16"	***	***	***	***	***
Total production	***	***	***	***	***

Note: Staff modified U.S. producer *** overall and allocated capacity levels based on the periods when the firm was actively producing graphited electrodes.

Source: Compiled from data submitted in response to Commission questionnaires.

Constraints on capacity

Both responding U.S. producers reported constraints in their manufacturing processes. One U.S. producer, Tokai Carbon, indicated that production constraints are attributed to ***. The other U.S. producer, GrafTech, indicated the *** was a limiting factor.

U.S. producers' U.S. shipments and exports

Table III-7 presents U.S. producers' U.S. shipments, export shipments, and total shipments of SD graphite electrodes. Neither of the U.S. producers reported internal consumption or transfers to related firms during the period for which data were collected. U.S. producers' U.S. shipments increased by *** percent from *** metric tons in 2016 to *** metric tons in 2017, then increased by *** percent to *** metric tons in 2018. U.S. shipments during January-September 2019 were *** percent lower than those reported in the comparable period in 2018. Exports were limited and sporadic.[20]

The unit values of U.S. producers' U.S. shipments increased in each annual period, most noticeably in 2018. The unit value of U.S. producers' U.S. shipments were *** percent higher in January-September 2019 compared to January-September 2018.

[20] During the original investigation, export shipments accounted for as much as *** percent of total shipments reported by the U.S. producers (in January-September 2008). Original confidential report, table III-3. Superior Graphite's exports ranged from *** to *** percent of its total shipments, while SGL's ranged from *** to *** percent. Original confidential report, p. III-4 note 4.

Table III-7
SD graphite electrodes: U.S. producers' U.S. shipments, exports shipments, and total shipments, 2016-18, January-September 2018, and January-September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Quantity (metric tons)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Value (1,000 dollars)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Unit value (dollars per metric ton)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of quantity (percent)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of value (percent)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-8 presents SD graphite electrodes U.S. producers' U.S. shipments by size and power type during 2018. The responding U.S. producers reported 14" to 16" graphite electrodes were produced in ***. The 14" to 16" produced in *** power accounted for *** share of shipments, and *** power account for *** share of shipments.[21]

Table III-9 presents SD graphite electrodes U.S. producers' U.S. shipments by size and application during 2018. The responding U.S. producers reported the 14" to 16" graphite electrodes are produced for use in *** (*** percent of U.S. shipments) and in *** (*** percent of U.S. shipments).[22]

Table III-8
SD graphite electrodes: U.S. producers' U.S. shipments by size and power type, 2018

Item	Ultra	High	Regular	Other	All types
	Quantity (metric tons)				
U.S. shipments:					
Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***
	Share across (percent)				
U.S. shipments:					
Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***
	Share down (percent)				
U.S. shipments:					
Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires.

[21] In 2007, *** percent of U.S. producers' U.S. shipments of SD graphite electrodes were in sizes from 8 to 12 inches, and *** percent were in sizes from 14 to 16 inches. Superior Graphite accounted for *** shipments in the lower size range in 2007. Original confidential report, p. III-7, table III-4.

[22] In 2007, *** percent of U.S. producers' U.S. shipments of SD graphite electrodes were used in foundry or refining or "other" applications, while *** percent were used in melting (furnace) applications. Original confidential report, p. III-8, table III-5. With respect to 18-inch graphite electrodes, an estimated *** percent were used in foundry or refining applications and *** percent were used in melting (furnace) applications. In all other sizes greater than 18 inches, an estimated *** percent of graphite electrodes were used in melting (furnace) applications. Original confidential report p. III-6, note 5.

Table III-9
SD graphite electrodes: U.S. producers' U.S. shipments by size and application, 2018

Item	DC EAF	AC EAF	Submerged arc	Ladle	Other	All applications
	Quantity (metric tons)					
U.S. shipments: Less than 14" diameter	***	***	***	***	***	
14" to 16" diameter	***	***	***	***	***	***
Total, size and application	***	***	***	***	***	***
	Share across (percent)					
U.S. shipments: Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
All diameter sizes	***	***	***	***	***	***
	Share down (percent)					
U.S. shipments: Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
Total, size and application	***	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. producers' inventories

Neither U.S. producer reported ending inventory.

U.S. producers' imports and purchases

Table III-10 presents data on individual U.S. producers' reported imports of SD graphite electrodes from both subject and nonsubject sources as well as the ratio of such imports to U.S. production. Neither U.S. producer of SD graphite electrodes reported purchases.

Table III-10
SD graphite electrodes: U.S. producers' U.S. production, purchases of imports, and ratios of purchases to U.S. production, 2016-18, January-September 2018, and January-September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Quantity (metric tons)				
GrafTech's U.S. production	***	***	***	***	***
GrafTech's U.S. imports from nonsubject sources (***)	***	***	***	***	***
	Ratio (percent)				
GrafTech's ratio to U.S. production of imports from nonsubject sources (***)	***	***	***	***	***
	Narrative				
Reason for importing	***				
	Quantity (metric tons)				
Tokai Carbon's U.S. production	***	***	***	***	***
Tokai Carbon's U.S. imports from nonsubject sources (***)	***	***	***	***	***
	Ratio (percent)				
Tokai Carbon's U.S. production of imports from nonsubject sources (***)	***	***	***	***	***
	Narrative				
Reason for importing	***				

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. employment, wages, and productivity

Table III-11 presents U.S. producers' employment-related data during 2016-18, January-September 2018, and January-September 2019. The number of production and related workers ("PRWs") employed by U.S. SD graphite electrode producers increased from 2016 to 2018 by *** percent to reach *** PRWs. The number of PRWs employed during January-September 2019 was *** percent lower than January-September 2018. The reduction in the number of PRWs in January-September 2019 reflects the operations of ***, which ***.[23] Hourly wages began to decrease in 2018 and were *** percent lower in January-September 2019 compared to January-September 2018. Productivity increased by *** percent from 2016 to 2018. Unit labor costs decreased from 2016 to 2017 by *** percent, and during 2017 to 2018 unit labor cost decreased *** percent. Unit labor costs in January-September 2018 were *** percent higher than in January-September 2019.

Table III-11
SD graphite electrodes: Average number of production and related workers, hours worked, wages paid to such employees, hourly wages, productivity, and unit labor costs, 2016-18, January-September 2018, and January-September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (metric tons per 1,000 hours)	***	***	***	***	***
Unit labor costs (dollars per metric tons)	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

[23] *** producer questionnaire response, section II-3a.

Financial experience of U.S. producers

Background

The financial results of two U.S. producers of SD graphite electrodes are presented in this section of the report. The responding U.S. producers reported their financial results on the basis of Generally Accepted Accounting Principles ("GAAP"). Both firms reported their financial results on a calendar-year basis.[24]

Operations on SD graphite electrodes

Table III-12 presents aggregated data on U.S. producers' operations with respect to SD graphite electrodes from 2016 to 2018, January to September 2018, and January to September 2019. Table III-13 presents changes in average unit value data between periods and table III-14 presents selected company-specific financial data.

[24] In terms of net sales quantity, Tokai Carbon accounted for *** percent and GrafTech accounted for *** percent in 2018. In terms of net sales value, Tokai Carbon accounted for *** percent and GrafTech accounted for *** percent in 2018.

Table III-12
SD graphite electrodes: Results of operations of U.S. producers, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Quantity (metric tons)				
Total net sales	***	***	***	***	***
	Value (1,000 dollars)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Interest expense	***	***	***	***	***
All other expenses	***	***	***	***	***
All other income	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
Depreciation/amortization	***	***	***	***	***
Cash flow	***	***	***	***	***
	Unit value (dollars per metric ton)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***

Table continued.

Table III-12--Continued
SD graphite electrodes: Results of operations of U.S. producers, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Ratio to COGS (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: ***.

Table III-13
SD graphite electrodes: Changes in AUVs, between calendar years and between partial year periods

Item	Between calendar years			Between partial year period
	2016-18	2016-17	2017-18	2018-19
	Changes in unit values (dollars per metric ton)			
Net sales	▲***	▲***	▲***	▲***
Cost of goods sold.-- Raw materials	▲***	▼***	▲***	▲***
Direct labor	▲***	▼***	▲***	▲***
Other factory costs	▼***	▲***	▼***	▲***
Average COGS	▲***	▼***	▲***	▲***
Gross profit	▲***	▲***	▲***	▲***
SG&A expense	▼***	▼***	▼***	▲***
Operating income or (loss)	▲***	▲***	▲***	▲***
Net income or (loss)	▲***	▲***	▲***	▲***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: ***.

Table III-14
SD graphite electrodes: Select results of operations of U.S. producers, by company, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Net sales quantity (metric tons)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Total net sales quantity	***	***	***	***	***
	Net sales value (1,000 dollars)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Total net sales value	***	***	***	***	***
	COGS (1,000 dollars)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Total COGS	***	***	***	***	***
	Gross profit or (loss) (1,000 dollars)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Total gross profit or (loss)	***	***	***	***	***
	SG&A expenses (1,000 dollars)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Total SG&A expenses	***	***	***	***	***
	Operating income or (loss) (1,000 dollars)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Total operating income or (loss)	***	***	***	***	***
	Net income or (loss) (1,000 dollars)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Total net income or (loss)	***	***	***	***	***

Table continued.

Table III-14--Continued
SD graphite electrodes: Select results of operations of U.S. producers, by company, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	COGS to net sales value (percent)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average COGS to sales	***	***	***	***	***
	Gross profit or (loss) to net sales value (percent)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average gross profit or (loss) to sales	***	***	***	***	***
	SG&A expenses to net sales value (percent)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average SG&A expenses to sales	***	***	***	***	***
	Operating income or (loss) to net sales value (percent)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average operating income or (loss) to sales	***	***	***	***	***
	Net income or (loss) to net sales value (percent)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average net income or (loss) to sales	***	***	***	***	***
	Unit net sales value (dollars per metric ton)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average unit net sales value	***	***	***	***	***
	Unit raw materials (dollars per metric ton)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average unit raw materials	***	***	***	***	***

Table continued.

Table III-14--Continued
SD graphite electrodes: Select results of operations of U.S. producers, by company, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Unit direct labor (dollars per metric ton)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average unit direct labor	***	***	***	***	***
	Unit other factory costs (dollars per metric ton)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average unit other factory costs	***	***	***	***	***
	Unit COGS (dollars per metric ton)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average unit COGS	***	***	***	***	***
	Unit gross profit or (loss) (dollars per metric ton)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average unit gross profit or (loss)	***	***	***	***	***
	Unit SG&A expense (dollars per metric ton)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average unit SG&A expense	***	***	***	***	***
	Unit operating income or (loss) (dollars per metric ton)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average unit operating income or (loss)	***	***	***	***	***
	Unit net income or (loss) (dollars per metric ton)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Average unit net income or (loss)	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: ***.

Net sales quantity and value

Net sales of SD graphite electrodes consist primarily of commercial sales. From 2016 to 2018, net sales volume increased by *** percent and net sales revenue increased by *** percent.[25] [26] Net sales value increased from $*** in 2016 to $*** in 2018, but was lower in January to September 2019 at $*** than in January to September 2018 at $***.

There was also a large increase in the average unit values ("AUVs") of net sales from 2016 to 2018. The net sales AUVs ranged from $*** in 2016 to $*** in 2018, and from $*** in January to September 2018 to $*** in January to September 2019.[27]

[25] Concerning the increase in sales, ***. Similarly, ***. Email from ***.

[26] ***. Email from ***. ***.

[27] Similar to the overall trends in net sales value, ***. Petitioners' posthearing brief, pp. 34-36.

Costs of goods sold and gross profit (or loss)

Raw material costs represent the largest component of overall COGS in all periods except 2017. The total cost of raw materials as a share of COGS ranged from *** percent (2017) to *** percent (January to September 2019). On a unit basis, raw material costs increased irregularly from $*** in 2016 to $*** in 2018. In January to September 2019, raw material costs ($***) were higher than in January to September 2018 ($***).[28] Both U.S. producers reported increased unit raw material costs in 2018 compared with 2016, as well as higher unit raw material costs in January to September 2019 compared with January to September 2018.[29] With respect to its U.S. operations, *** reported that the firm purchases inputs from related parties.[30]

The second largest component of COGS in all periods except 2017 was other factory costs, which represented between *** percent (in January to September 2019) and *** percent (in 2017) of overall COGS. On a unit basis, other factory costs decreased from $*** in 2016 to $*** in 2018. In January to September 2019, other factory costs were higher ($***) than in January to September 2018 ($***).

Direct labor, the smallest component of COGS, accounted for between *** percent (in January to September 2019) and *** percent (in 2017) of overall COGS. On a unit basis, direct labor irregularly increased from $*** in 2016 to $*** in 2018. In January to September 2019, on a unit basis, direct labor costs ($***) were higher than in January to September 2018 ($***.

[28] ***. Email from ***.

[29] As previously discussed, *** reported increased raw material costs in 2018 when compared to 2016, as well as between the comparable interim periods. ***. Email from ***.

[30] ***. Email from ***.

On an overall basis, the SD graphite electrode industry's gross profit increased from a *** in 2016 to *** in 2017 and $*** in 2018. Gross profit was higher in January to September 2019 ($***) than in January to September 2018 ($***).[31] [32]

SG&A expenses and operating income (or loss)

As shown in table III-12, the industry's SG&A expense ratio (i.e., total SG&A expenses divided by total revenue) decreased from *** percent in 2016 to *** percent in 2018, and it was lower in January to September 2019 at *** percent than January to September 2018 at *** percent. The decrease in the SG&A expense ratio from 2016 to 2018 is attributable to a larger increase in net sales value than the increase in SG&A expenses. Actual SG&A expenses increased from $*** in 2016 to $*** in 2018, and it was lower in January to September 2019 at $*** than in January to September 2018 at $***. Table III-14 shows that from 2016 to 2018 and the comparable interim periods, the pattern of company-specific SG&A expense ratios were mixed in terms of directional trend.[33]

Operating income followed the same directional trend, from a *** of $*** in 2016 to a *** of $*** in 2017, and then to a *** of $*** in 2018. Operating income was higher in January to September 2019 at $*** when compared to January to September 2018 at $***.

[31] As shown in table III-13, the increase in the per-unit gross profit reflects an increase of $*** from 2016 to 2018 in the per-unit net sales value, which was greater than the increase of $*** in the industry's per-unit COGS during this time. Similarly, the partial year data show a larger increase in the per-unit net sales value ($***) than per-unit COGS ($***).

[32] Although demand was lower in 2019, needle coke prices were also in decline which led to a higher gross profit in January-September 2019 compared to January-September 2018. Petitioners' posthearing brief, pp. 34-36.

[33] ***. Email from ***.

Other expenses and net income (or loss)

Classified below the operating income level are interest expense, other expenses, and other income, which are usually allocated to the product line from high levels in the corporation. Interest expense increased from $*** in 2016 to $*** in 2018. Other expenses increased from $*** in 2016 to $*** in 2018. Other income was not reported by the U.S. producers. Interest expense was lower at $*** in January to September 2019 when compared to $*** in January to September 2018. Other expenses were lower at $*** in January to September 2019 when compared to $*** in January to September 2018.

Overall, net income followed a similar directional trend to gross profit and operating income, from a *** of $*** in 2016 to a *** of $*** in 2017, and then to a *** of $*** in 2018. Net income was higher in January to September 2019 at $*** when compared to January to September 2018 at $***.

Variance analysis

Due to the aforementioned *** of GrafTech's SD graphite electrodes operations during ***, a variance analysis is not presented in this report.

Capital expenditures and research and development expenses

Table III-15 presents capital expenditures and research and development ("R&D") expenses by firm. *** responding firms provided capital expenditure data, and *** provided data on R&D expenses. *** accounted for the largest company-specific amount of capital expenditures throughout the period for which data were collected. Total reported capital expenditures for the industry increased from $*** in 2016 to $*** in 2018, and it was higher in January to September 2019 at $*** than in January to September 2018 at $***.[34]

Table III-15
SD graphite electrodes: Capital expenditures and research and development expenses for U.S. producers, by firm, 2016-18, January to September 2018, and January to September 2019

	Calendar year			January to September	
	2016	2017	2018	2018	2019
Item	Capital expenditures (1,000 dollars)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Total capital expenditures	***	***	***	***	***
	Research and development expenses (1,000 dollars)				
GrafTech	***	***	***	***	***
Tokai Carbon	***	***	***	***	***
Total R&D expenses	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

[34] Regarding the firm's trends in capital expenditures during the period for which data were requested, ***. Email from ***.

Assets and return on assets

Table III-16 presents data on the U.S. producers' total assets and their operating return on assets ("ROA").[35] Total net assets for the SD graphite electrode industry increased from $*** in 2016 to $*** in 2018, and the ROA increased from *** percent to *** percent during this time.[36] [37]

Table III-16
SD graphite electrodes: Value of assets used in production, warehousing, and sales, and return on investment for U.S. producers by firm, 2016-18

Firm	Calendar year		
	2016	2017	2018
	Total net assets (1,000 dollars)		
GrafTech	***	***	***
Tokai Carbon	***	***	***
Total net assets	***	***	***
	Operating return on assets (percent)		
GrafTech	***	***	***
Tokai Carbon	***	***	***
Average operating return on assets	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

[35] With respect to a company's overall operations, staff notes that a total asset value (i.e., the bottom line number on the asset side of a company's balance sheet) reflects an aggregation of a number of assets, which are generally not product specific. Accordingly, high-level allocation factors may have been required in order to report a total asset value for SD graphite electrodes.

[36] ***. Email from ***.

[37] ***.

Part IV: U.S. imports and the foreign industries

U.S. imports

Overview

The Commission issued questionnaires to 50 potential importers of SD graphite electrodes, as well as to all U.S. producers of SD graphite electrodes. Twelve firms provided data and information in response to the questionnaires, while nine firms indicated that they had not imported SD graphite electrodes since January 2014. U.S. import data and related information are based on Commerce's official import statistics and the questionnaire responses of 12 U.S. importers of SD graphite electrodes that are believed to have accounted for *** percent of U.S. imports from China, *** percent of U.S. imports from other sources, and 70.0 percent of total U.S. imports of SD graphite electrodes in 2018.

Imports from subject and nonsubject countries

Table IV-1 and figure IV-1 present information on U.S. imports of SD graphite electrodes from China and all other sources during 2016-18, January to September 2018, and January to September 2019. Imports of SD graphite electrodes from China by quantity increased by 2,414 metric tons between 2016 and 2018 and by approximately 2,856 percent by value. During January to September 2019 imports of SD graphite electrodes from China by quantity were 1,878 metric tons lower than the comparable 2018 period. With regard to value, imports of SD graphite electrodes were approximately four times lower during January to September 2019 compared to January to September 2018. Imports of SD graphite electrodes from nonsubject countries by quantity increased by 10,055 metric tons between 2016 and 2018 and by 184.4 percent by value. The top three nonsubject countries in 2018 were Mexico, India, and Ukraine.

Table IV-1
SD graphite electrodes: U.S. imports by source, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Quantity (metric tons)				
U.S. imports from.--					
China	484	1,198	2,899	2,730	852
Nonsubject sources	11,452	14,159	21,508	15,461	13,993
All import sources	11,937	15,357	24,406	18,190	14,844
	Value (1,000 dollars)				
U.S. imports from.--					
China	1,165	9,037	34,435	32,322	5,934
Nonsubject sources	31,662	36,857	90,039	59,291	76,002
All import sources	32,827	45,894	124,474	91,613	81,937
	Unit value (dollars per metric ton)				
U.S. imports from.--					
China	2,405	7,544	11,880	11,841	6,968
Nonsubject sources	2,765	2,603	4,186	3,835	5,432
All import sources	2,750	2,989	5,100	5,036	5,520
	Share of quantity (percent)				
U.S. imports from.--					
China	4.1	7.8	11.9	15.0	5.7
Nonsubject sources	95.9	92.2	88.1	85.0	94.3
All import sources	100.0	100.0	100.0	100.0	100.0
	Share of value (percent)				
U.S. imports from.--					
China	3.5	19.7	27.7	35.3	7.2
Nonsubject sources	96.5	80.3	72.3	64.7	92.8
All import sources	100.0	100.0	100.0	100.0	100.0
	Ratio to U.S. production (percent)				
U.S. imports from.--					
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from official U.S. import statistics using statistical reporting numbers 8545.11.0010, accessed December 6, 2019.

Figure IV-1
SD graphite electrodes: U.S. import quantity and average unit value, 2016-18, January to September 2018, and January to September 2019

* * * * * * *

Source: Official U.S. import statistics using HTS statistical reporting number 8545.11.0010, accessed December 6, 2019.

Table IV-2
SD graphite electrodes: Nonsubject U.S. imports by source, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Quantity (metric tons)				
Mexico	4,315	4,892	7,498	5,170	4,171
India	1,189	1,734	6,318	4,328	5,357
Ukraine	327	1,141	1,758	1,242	1,834
Russia	---	263	1,741	1,741	17
Japan	1,945	2,325	1,524	1,354	824
Germany	1,220	737	969	776	232
United Kingdom	463	1,142	671	362	427
Spain	70	128	462	122	281
Austria	1,721	1,021	218	134	833
All other sources	201	776	350	231	18
Nonsubject sources	11,452	14,159	21,508	15,461	13,993
	Value (1,000 dollars)				
Mexico	10,865	11,436	22,492	14,723	17,011
India	2,904	3,949	15,143	10,486	13,621
Ukraine	687	2,138	11,727	7,269	14,153
Russia	---	515	3,959	3,959	170
Japan	5,358	5,125	10,204	8,527	11,601
Germany	4,947	3,620	10,583	7,257	3,153
United Kingdom	1,510	4,380	5,917	2,369	3,479
Spain	200	229	4,492	1,186	2,785
Austria	4,506	2,377	2,087	993	9,846
All other sources	685	3,089	3,436	2,521	184
Nonsubject sources	31,662	36,857	90,039	59,291	76,002

Table Continued on next page.

Table IV-2—Continued
SD graphite electrodes: Nonsubject U.S. imports by source, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Unit value (dollars per metric ton)				
Mexico	2,518	2,338	3,000	2,848	4,078
India	2,441	2,277	2,397	2,423	2,543
Ukraine	2,101	1,873	6,671	5,851	7,717
Russia	---	1,961	2,274	2,274	9,802
Japan	2,754	2,204	6,697	6,298	14,082
Germany	4,055	4,909	10,922	9,350	13,609
United Kingdom	3,260	3,836	8,823	6,541	8,157
Spain	2,840	1,781	9,726	9,721	9,915
Austria	2,619	2,329	9,584	7,422	11,825
All other sources	3,412	3,981	9,819	10,901	10,215
Nonsubject sources	2,765	2,603	4,186	3,835	5,432
	Share of quantity (percent)				
Mexico	37.7	34.5	34.9	33.4	29.8
India	10.4	12.2	29.4	28.0	38.3
Ukraine	2.9	8.1	8.2	8.0	13.1
Russia	---	1.9	8.1	11.3	0.1
Japan	17.0	16.4	7.1	8.8	5.9
Germany	10.7	5.2	4.5	5.0	1.7
United Kingdom	4.0	8.1	3.1	2.3	3.0
Spain	0.6	0.9	2.1	0.8	2.0
Austria	15.0	7.2	1.0	0.9	6.0
All other sources	1.8	5.5	1.6	1.5	0.1
Nonsubject sources	100.0	100.0	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from official U.S. import statistics using statistical reporting number 8545.11.0010, accessed December 6, 2019.

U.S. importers' imports subsequent to September 30, 2019

The Commission requested importers to indicate whether they had imported or arranged for the importation of SD graphite electrodes from China for delivery after September 30, 2019. One firm reported arranged imports from China and seven firms reported arranged imports from nonsubject sources during October 2019 to September 2020.

Table IV-3
SD graphite electrodes: U.S. importers' arranged imports

	Period				
Arranged U.S. imports from	Oct-Dec 2019	Jan-Mar 2020	Apr-Jun 2020	Jul-Sep 2020	Total
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Note: Arranged imports from China represent those reported by ***.

Source: Compiled from data submitted in response to Commission questionnaires.

Table IV-4 presents SD graphite electrodes U.S. importers' shipments by size and power during 2018. The responding importers reported graphite electrodes were imported in three different power types; (Ultra, High, Regular and other). SD graphite electrodes from China were primarily imported in the High Power type. Graphite electrodes from nonsubject sources were primarily imported in the Ultra and High Power type.

Table IV-5 presents SD graphite electrodes U.S. importers' shipments by size and application during 2018. SD graphite electrodes from China were primarily imported for alternating current EAF applications. SD graphite electrodes from nonsubject sources were also imported for EAF applications (both direct and alternating current) but were primarily imported for ladle furnace applications.

Table IV-4
SD graphite electrodes: U.S. importers' shipments by size and power, 2018

Item	Ultra	High	Regular	Other	All types
	Quantity (metric tons)				
U.S. shipments from China:					
Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***
	Share across (percent)				
U.S. shipments from China:					
Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***
	Share down (percent)				
U.S. shipments from China:					
Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***
	Quantity (metric tons)				
U.S. shipments from Nonsubject sources:					
Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***
	Share across (percent)				
U.S. shipments from Nonsubject sources:					
Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***
	Share down (percent)				
U.S. shipments from Nonsubject sources:					
Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***

Table Continued on next page.

Table IV-4—Continued
SD graphite electrodes: U.S. importers' shipments by size and power, 2018

Item	Ultra	High	Regular	Other	All types
	Quantity (metric tons)				
U.S. shipments from all sources: Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***
	Share across (percent)				
U.S. shipments from all sources: Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***
	Share down (percent)				
U.S. shipments from all sources: Less than 14" diameter	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***
All diameter sizes	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table IV-5
SD graphite electrodes: U.S. importers' shipments from by size and application, 2018

Item	DC EAF	AC EAF	Submerged arc	Ladle	Other	All applications
	Quantity (metric tons)					
U.S. shipments from China:						
Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
Total, size and application	***	***	***	***	***	***
	Share across (percent)					
U.S. shipments from China:						
Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
All diameter sizes	***	***	***	***	***	***
	Share down (percent)					
U.S. shipments from China:						
Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
Total, size and application	***	***	***	***	***	***
	Quantity (metric tons)					
U.S. shipments from nonsubject sources:						
Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
Total, size and application	***	***	***	***	***	***
	Share across (percent)					
U.S. shipments from nonsubject sources:						
Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
All diameter sizes	***	***	***	***	***	***
	Share down (percent)					
U.S. shipments from nonsubject sources:						
Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
Total, size and application	***	***	***	***	***	***

Table Continued on next page.

Table IV-5--Continued
SD graphite electrodes: U.S. importers' shipments from by size and application, 2018

Item	DC EAF	AC EAF	Submerged arc	Ladle	Other	All applications
	Quantity (metric tons)					
U.S. shipments from all sources: Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
Total, size and application	***	***	***	***	***	***
	Share across (percent)					
U.S. shipments from all sources: Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
All diameter sizes	***	***	***	***	***	***
	Share down (percent)					
U.S. shipments from all sources: Less than 14" diameter	***	***	***	***	***	***
14" to 16" diameter	***	***	***	***	***	***
Total, size and application	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. importers' inventories

Table IV-6 presents data for inventories of U.S. imports of SD graphite electrodes from China and all other sources held in the United States. No importer reported inventories for SD graphite electrodes from China, however the importer inventories for nonsubject countries increased from 2016 to 2018 by *** percent, and were higher in January to September 2019 than in January to September 2018

Table IV-6
SD graphite electrodes: U.S. importers' end-of-period inventories of imports, by source, 2016-18, January to September 2018, and January to September 2019

Item	Calendar year			January to September	
	2016	2017	2018	2018	2019
	Inventories (metric tons); Ratios (percent)				
Imports from China: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from nonsubject sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from all import sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires.

The industry in China

Overview

The Commission issued foreign producers' or exporters' questionnaires to 100 firms believed to produce and/or export SD graphite electrodes from China.[1] None of these firms provided a response.

During the final phase of the original investigation, the Commission received foreign producer/exporter questionnaires from 13 firms, which accounted for nearly *** percent of production of SDGE in China during 2007, and nearly *** percent of exports from China to the United States of SDGE during 2007.[2] Although the Commission did not receive responses from any respondent interested parties in its expedited first five-year review, the domestic interested parties provided a list of 112 firms that they believed produced SDGE in China at that time.[3] Likewise, the Commission did not receive any responses from respondent interested parties in this current second five-year review. The domestic interested party again provided a list to the notice of institution of 112 firms in China that it believes currently export or have exported SDGE to the United States or other countries.[4]

Information available concerning the subject industry in China includes public data on graphite electrodes, regardless of diameter. Chinese graphite electrode production capacity declined from about 800,000 metric tons in 2016 (and even higher in prior years) to 700,000 metric tons in 2017 as the government forced polluting plants to close for environmental

[1] These firms were identified through a review of information submitted in the response to the notice of institution and contained in *** records.

[2] Original confidential report, p. VII-1.

[3] *Small Diameter Graphite Electrodes from China, Inv. No. 731-TA-1143 (Final),* USITC Publication 4062, p. 10; *Small Diameter Graphite Electrodes from China, Investigation No. 731-TA-1143 (Review),* USITC Publication 4469, p. 16

[4] *Domestic interested party's response to the notice of institution,* May 31, 2019, p. 19 and exh. 4.

reasons (table IV-7).[5] Production capacity in China recovered in 2018, with manufacturing plants re-opening and the addition of new manufacturing facilities.[6]

[5] Government closures of coal tar pitch plants (coal tar pitch which is used to produce coal-based needle coke) also impacted Chinese producers in 2017. Chinese needle coke production capacity is expected to increase in 2019–20. Butterworth, Paul, "Graphite Electrode Prices have Risen Sharply Due to Supply Tightness in China," *CRU Group*, August 9, 2017. https://www.crugroup.com/knowledge-and-insights/insights/graphite-electrode-prices-have-risen-sharply-due-to-supply-tightness-in-china/, retrieved July 10, 2019; *SteelMint*, "SteelMint's China Roadshow: Precious Insights into Graphite Electrodes and Needle Coke," April 18, 2019, https://events.steelmintgroup.com/steelmints-china-roadshow-precious-insights-into-graphite-electrodes-and-needle-coke/, retrieved July 10, 2019; Shaw, Suzanne, "Understanding the Synthetic Graphite Electrode Crisis," 7th Graphite and Graphene Conference, *Roskill*, September 6, 2018, p. 12, https://www.indmin.com/events/download.ashx/document/speaker/E001526/a0ID000000cta9VMAQ/Presentation, retrieved July 10, 2019; *SteelMint*, "China Needle Coke Prices Reverses the Global Trend," June 11, 2019, https://events.steelmintgroup.com/china-needle-coke-prices-reverses-the-global-trend/, retrieved July 10, 2019; *Massif Capital, Graftech (EAF), Investment Review,* July 2018, p. 2, https://static1.squarespace.com/static/55cbe47de4b0a1e3b9b911fe/t/5b56268ef950b7be70cad9d7/1532372622855/GrafTech+%28EAF%29+Massif+Capital+22JUL2018.pdf, retrieved June 13, 2019.

[6] Sarah Macnaughton, Harry Fisher, Lidan Wang, and Lynn Lupori, "Graphite Electrodes: Panic over? Or worse to come?" *CRU Group*, September 2018, https://www.crugroup.com/knowledge-and-insights/insights/2018/graphite-electrodes-panic-over-or-worse-to-come/, retrieved July 10, 2019; *SteelMint*, "SteelMint's China Roadshow: Precious Insights into Graphite Electrodes and Needle Coke," April 18, 2019, https://events.steelmintgroup.com/steelmints-china-roadshow-precious-insights-into-graphite-electrodes-and-needle-coke/, retrieved July 10, 2019; Shaw, Suzanne, "Understanding the Synthetic Graphite Electrode Crisis," 7th Graphite and Graphene Conference, *Roskill*, September 6, 2018, p. 4, https://www.indmin.com/events/download.ashx/document/speaker/E001526/a0ID000000cta9VMAQ/Presentation, retrieved July 10, 2019; *Macquarie Research, Indian Graphite Electrode Sector*, June 28, 2018, p. 20, http://forum.valuepickr.com/uploads/default/original/3X/0/5/05d4e396a9f1a6e1bf6dfe463752ed597f3e6502.pdf, retrieved July 10, 2019.

Table IV-7
Graphite electrode production capacity in China, 2016–18

	2016	2017	2018
	Quantity (thousand metric tons)		
Production	507	551–588	700
Capacity	800	700	1,200

Source: *Massif Capital, GrafTech (EAF), Investment Review,* July 2018, p. 2, https://static1.squarespace.com/static/55cbe47de4b0a1e3b9b911fe/t/5b56268ef950b7be70cad9d7/1532372622855/GrafTech+%28EAF%29+Massif+Capital+22JUL2018.pdf, retrieved June 13, 2019; SteelMint, "SteelMint's China Roadshow: Precious Insights into Graphite Electrodes and Needle Coke," April 18, 2019, https://events.steelmintgroup.com/steelmints-china-roadshow-precious-insights-into-graphite-electrodes-and-needle-coke/, retrieved July 10, 2019; Steel360, "Will China Add to its Graphite Electrode Capacities in 2018 to Meet the Increasing Demand?" March 20, 2018, https://www.steel-360.com/stories/graphite-electrode/will-china-add-graphite-electrode-capacities-2018-meet-increasing-demand, retrieved June 17, 2019.

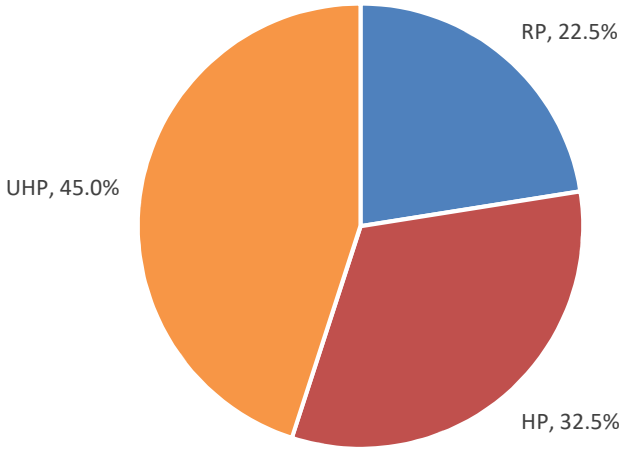
Note: This table uses Massif Capital's data on production capacity for 2016 and 2017. For 2018, capacity data are from official Chinese statistics, as reported by Steel360.

Chinese graphite electrode production increased from about 507,000 metric tons in 2016 to about 700,000 metric tons in 2018.[7] A substantial share of Chinese production is smaller diameter, non-UHP electrodes, with ladle electrodes for blast oxygen furnaces accounting for the majority of production (figure IV-2). There are a large number of producers

[7] *SteelMint*, "SteelMint's China Roadshow: Precious Insights into Graphite Electrodes and Needle Coke," April 18, 2019, https://events.steelmintgroup.com/steelmints-china-roadshow-precious-insights-into-graphite-electrodes-and-needle-coke/, retrieved July 10, 2019; *Steel360*, "Will China Add to its Graphite Electrode Capacities in 2018 to Meet the Increasing Demand?" March 20, 2018, https://www.steel-360.com/stories/graphite-electrode/will-china-add-graphite-electrode-capacities-2018-meet-increasing-demand, retrieved June 17, 2019; *Steel360*, "Chinese Graphite Electrode Export to Dry Up in 2018?" March 6, 2018, https://www.steel-360.com/stories/graphite-electrode/chinese-graphite-electrode-export-dry-2018, retrieved June 17, 2019.

in China with small-scale production.[8] Graphite India projects that China's production capacity will reach 1.5 million metric tons in 2020.[9]

Figure IV-2
SD graphite electrodes: China's electrode production by grade, 2017



Source: Steel360, "Will China Add to its Graphite Electrode Capacities in 2018 to Meet the Increasing Demand?" March 20, 2018, https://www.steel-360.com/stories/graphite-electrode/will-china-add-graphite-electrode-capacities-2018-meet-increasing-demand, retrieved December 9, 2019.

[8] *GrafTech International, Credit Suisse 31st Annual Basic Materials Conference*, September 12–13, 2018, p. 17, http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njk5NzcyfENoaWxkSUQ9NDExMjk2fFR5cGU9MQ==&t=1, retrieved June 30, 2019; *SteelMint*, "SteelMint's China Roadshow: Precious Insights into Graphite Electrodes and Needle Coke," April 18, 2019, https://events.steelmintgroup.com/steelmints-china-roadshow-precious-insights-into-graphite-electrodes-and-needle-coke/, retrieved July 10, 2019; *Massif Capital, Graftech (EAF), Investment Review,* July 2018, pp. 8–9, https://static1.squarespace.com/static/55cbe47de4b0a1e3b9b911fe/t/5b56268ef950b7be70cad9d7/1532372622855/GrafTech+%28EAF%29+Massif+Capital+22JUL2018.pdf, retrieved June 13, 2019; *Centrum, Graphite Electrodes*, Sector Update, April 26, 2018, http://forum.valuepickr.com/uploads/default/original/2X/4/465063f7a72b626914ffaf7385923b23db380b14.pdf, retrieved July 10, 2019.

[9] Graphite India Limited, "Q4 and Full Year FY2019 Earnings Presentation," May 18, 2019, p. 8, http://ir.graphiteindia.com/assets/upload/pdf/004812600_1558178459.pdf, retrieved June 13, 2019.

Chinese domestic consumption of graphite electrodes is increasing due to the construction of new EAF production capacity (though a breakdown of consumption trends by size is not available).[10] In addition, Chinese steel production overall increased substantially during 2016–18. Total steel production in China increased from 808 million metric tons in 2016 to 928 million metric tons in 2018. Oxygen-blown converter steel production increased from 757 million metric tons in 2016 to 820 million tons in 2018. Electric furnace steel production increased from 51 million tons in 2016 to 108 million tons in 2018.[11]

Chinese graphite electrode prices *** (figure IV-3). Prices for 450 mm UHP electrodes, which are the closest in size to the scope of this review, ***, then ***.[12] From January 2017 to early 2018, 400 mm HP SD graphite electrodes followed a similar price trend to 600 mm UHP graphite electrodes, with prices substantially increasing in the second half of 2017 and remaining high into early 2018 (figure IV-4).[13]

[10] *Steel360*, "Will China Add to its Graphite Electrode Capacities in 2018 to Meet the Increasing Demand?" March 20, 2018, https://www.steel-360.com/stories/graphite-electrode/will-china-add-graphite-electrode-capacities-2018-meet-increasing-demand, retrieved June 17, 2019; *Steel360*, "Chinese Graphite Electrode Export to Dry Up in 2018?" March 6, 2018, https://www.steel-360.com/stories/graphite-electrode/chinese-graphite-electrode-export-dry-2018, retrieved June 17, 2019.

[11] World Steel Association, *Steel Statistical Yearbook 2018*, November 2018, p. 16, https://www.worldsteel.org/en/dam/jcr:e5a8eda5-4b46-4892-856b-00908b5ab492/SSY_2018.pdf, retrieved December 10, 2019; World Steel Association, *Steel Statistical Yearbook 2019 (Concise Version)*, November 2019, p. 2, 6, https://www.worldsteel.org/en/dam/jcr:7aa2a95d-448d-4c56-b62b-b2457f067cd9/SSY19%2520concise%2520version.pdf, retrieved December 10, 2019.

[12] ***.

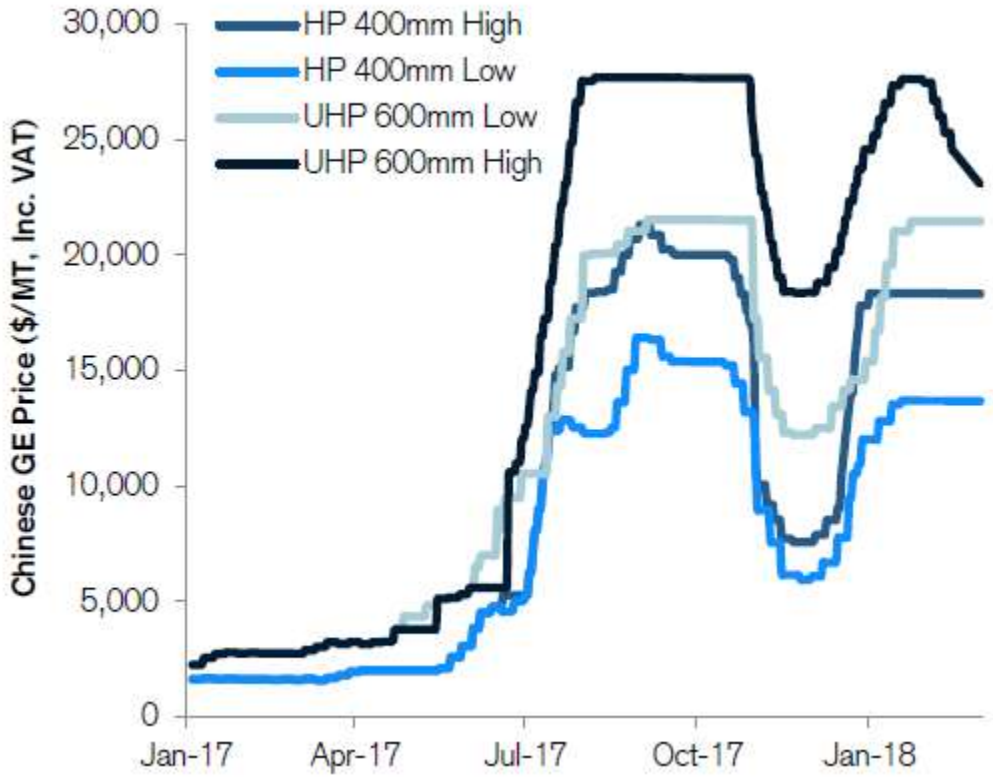
[13] Credit Suisse, Graftech International Ltd., May 14, 2018, p. 28, https://research-doc.credit-suisse.com/docView?language=ENG&format=PDF&sourceid=csplusresearchcp&document_id=1080449881&serialid=SwEAHbbwdd7RerF1fGkc0KaeSJ4lNpHcR2kRDqKW5Pc%3D&cspId=1766774152791285760, retrieved June 17, 2019.

Figure IV-3
SD graphite electrodes: China's graphite electrode prices, January 2017–October 2019

* * * * * * *

Source: ***

Figure IV-4
SD graphite electrodes: China's graphite electrode prices, 2017–early 2018



Source: *Credit Suisse, Graftech International Ltd.,* May 14, 2018, p. 12, https://research-doc.credit-suisse.com/docView?language=ENG&format=PDF&sourceid=csplusresearchcp&document_id=1080449881&serialid=SwEAHbbwdd7RerF1fGkc0KaeSJ4lNpHcR2kRDqKW5Pc%3D&cspId=1766774152791285760, retrieved June 17, 2019.

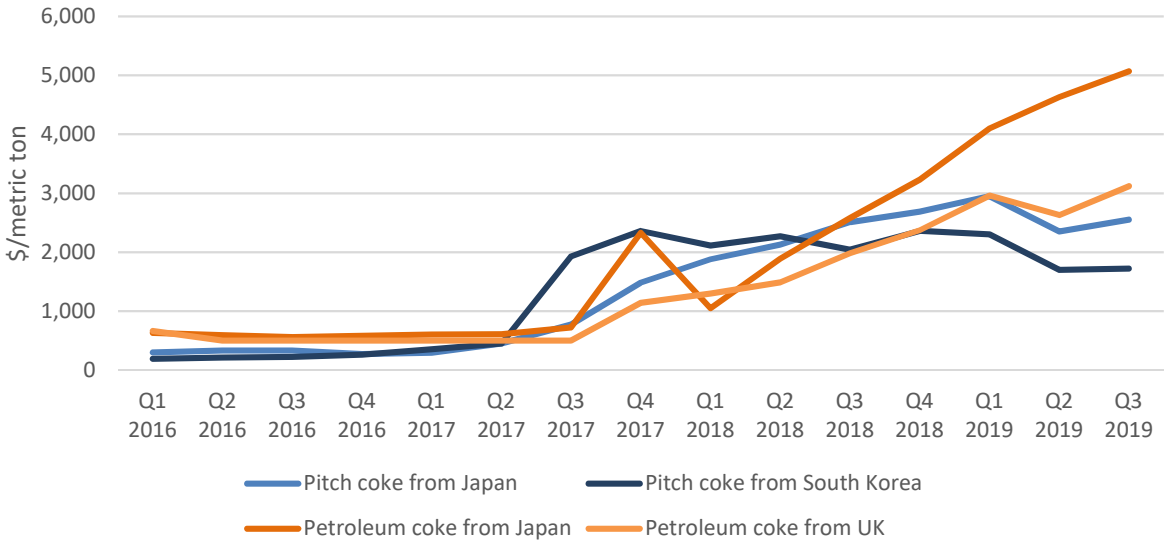
Chinese prices for imported needle coke increased during 2016–19, although prices of imported pitch coke declined from the first to second quarter of 2019 (figure IV-5).[14] China's graphite electrode industry relies on imports of high quality needle coke for the production of UHP electrodes.[15] However, prices of domestic needle coke do not always move in the same direction, and domestic needle coke prices fell 35 percent in the first half of 2019 (figure IV-6).[16]

[14] Official imports statistics under HS subheadings 2708.20 (pitch coke) and 2713.12 (petroleum coke), as reported by China Customs in the Global Trade Atlas database, December 11, 2019.

[15] SteelMint, "Will China's Needle Coke Shortage Derail Their Graphite Electrodes Production Plans?" March 18, 2019, https://events.steelmintgroup.com/will-chinas-needle-coke-shortage-derail-their-graphite-electrodes-production-plans/, retrieved December 11, 2019; SteelMint, "China Needle Coke Prices Reverses the Global Trend," June 11, 2019, https://events.steelmintgroup.com/china-needle-coke-prices-reverses-the-global-trend/, retrieved December 11, 2019.

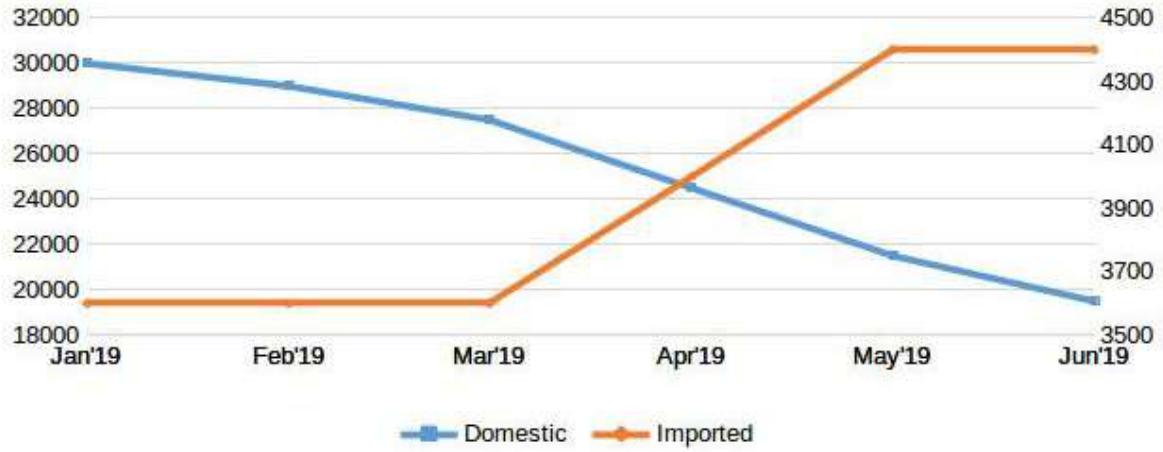
[16] SteelMint, "China Needle Coke Prices Reverses the Global Trend," June 11, 2019, https://events.steelmintgroup.com/china-needle-coke-prices-reverses-the-global-trend/, retrieved December 11, 2019.

Figure IV-5
SD graphite electrodes: China's imported pitch and petroleum coke prices, select countries, 2016–Q3 2019



Source: Official imports statistics under HS subheadings 2708.20 (pitch coke) and 2713.12 (petroleum coke), as reported by China Customs in the Global Trade Atlas database, December 11, 2019.

Figure IV-6
SD graphite electrodes: China needle coke prices, January to June 2019



Source: SteelMint, "China Needle Coke Prices Reverses the Global Trend," June 11, 2019, https://events.steelmintgroup.com/china-needle-coke-prices-reverses-the-global-trend/, retrieved December 11, 2019.

China is substantially expanding its needle coke production capacity. As of 2019, production capacity was 280,000 metric tons, of which 71 percent was coal-tar pitch based and

29 percent was petroleum based.[17] According to a June 2019 report, 560,000 metric tons of coal-based needle coke is expected to come online in 2019–20 and the same amount of petroleum-based needle coke capacity is expected in 2019–20.[18] For the coal-based needle coke plants, there are questions about whether firms will be able to source enough high quality inputs.[19]

Profile of Fushun Jinly Petrochemical Carbon Plant ("Fushun Jinly")

Fushun Jinly is a Chinese graphite electrode producer based in Liaoning, and ***.[20] It produces 3 to 20 inch graphite electrodes, with grades (depending on the size) from RP to UHP. Its annual graphite electrode production capacity is 8,000 to 10,000 metric tons. The firm uses a mix of domestic inputs and imported needle coke from Japan. It states that 70 percent of production is exported, including to Europe (36 percent of exports), the United States (33 percent), and Japan (21 percent).[21]

[17] SteelMint, "Needle Coke Prices Won't Fall in Next 2 Years: Chinese Needle Coke Manufacturer Tells SteelMint," April 24, 2019, https://events.steelmintgroup.com/needle-coke-prices-wont-fall-in-next-2-years-chinese-needle-coke-manufacturer-tells-steelmint/, retrieved December 11, 2019.

[18] SteelMint, "China Needle Coke Prices Reverses the Global Trend," June 11, 2019, https://events.steelmintgroup.com/china-needle-coke-prices-reverses-the-global-trend/, retrieved December 11, 2019.

[19] SteelMint, "Will China's Needle Coke Shortage Derail Their Graphite Electrodes Production Plans?" March 18, 2019, https://events.steelmintgroup.com/will-chinas-needle-coke-shortage-derail-their-graphite-electrodes-production-plans/, retrieved December 11, 2019.

[20] ***.

[21] Fushun Jinly Webpage, http://www.jinly.com.cn/lxwm.aspx?id=2 and http://www.jinly.com.cn/lxwm.aspx?id=3, retrieved February 7, 2020; Alibaba Webpage, https://sellelectrode.fm.alibaba.com/company_profile.html?spm=a2700.icbuShop.88.7.5f8e7904Ig8AE3, retrieved February 7, 2020.

Exports

According to GTA, Chinese exports of carbon electrodes (which include graphite electrodes) increased from 157,000 metric tons in 2016 to 333,000 metric tons in 2018 (table IV-8). During 2018, the United States was the second largest export market, by volume, for graphite electrodes from China, accounting for 7.2 percent of exports. Iran accounted for 13.8 percent of exports, and Russia accounted for 6.9 percent. Exports to Iran, however, were primarily low value items. The unit value of China's exports increased from $1,708 per metric ton in 2016 to $8,848 per metric ton in 2018.[22]

Table IV-8
Carbon electrodes: China exports by destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Quantity (metric tons)		
United States	6,772	15,827	23,952
Iran	7,541	22,206	45,901
Russia	20,660	23,111	22,909
Italy	11,346	12,352	18,203
Korea	8,776	10,040	16,547
Turkey	8,317	15,603	14,742
Japan	9,598	10,457	12,404
All other destination markets	84,157	127,730	178,573
Total exports	157,167	237,326	333,232
	Value (1,000 dollars)		
United States	14,505	79,009	222,640
Iran	6,033	14,556	68,858
Russia	34,200	187,317	247,312
Italy	17,012	53,697	165,784
Korea	17,595	51,486	154,801
Turkey	12,337	70,907	120,459
Japan	19,695	36,772	117,839
All other destination markets	146,988	659,356	1,850,582
Total exports	268,367	1,153,100	2,948,276

Table continued on next page.

[22] Official exports statistics under HS subheadings 8545.11, as reported by China Customs in the Global Trade Atlas database, November 19, 2019.

Table IV-8--Continued
Carbon electrodes: China exports by destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Unit value (dollars per metric ton)		
United States	2,142	4,992	9,295
Iran	800	656	1,500
Russia	1,655	8,105	10,795
Italy	1,499	4,347	9,107
Korea	2,005	5,128	9,355
Turkey	1,483	4,545	8,171
Japan	2,052	3,517	9,500
All other destination markets	1,747	5,162	10,363
Total exports	1,708	4,859	8,848
	Share of quantity (percent)		
United States	4.3	6.7	7.2
Iran	4.8	9.4	13.8
Russia	13.1	9.7	6.9
Italy	7.2	5.2	5.5
Korea	5.6	4.2	5.0
Turkey	5.3	6.6	4.4
Japan	6.1	4.4	3.7
All other destination markets	53.5	53.8	53.6
Total exports	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2018 data. These data include nonsubject products.

Source: Official exports statistics under HS subheadings 8545.11, as reported by China Customs in the Global Trade Atlas database, November 19, 2019.

Antidumping or countervailing duty orders in third-country markets

During the original investigation, SD graphite electrodes from China, as well as graphite electrodes of larger diameters, were subject to an existing antidumping duty order in India and an ongoing antidumping duty investigation in Brazil. During the first review, domestic producers of SD graphite electrodes reported measures in place in Brazil (dumping margin of 145.3 percent) and in Mexico (dumping margins of 38-250 percent), with additional ongoing proceedings in India and South Africa.[23] These antidumping duties and investigations have all been terminated or suspended, as follows:

[23] First review publication, p. I-18.

- Brazil: On September 21, 2018, Brazil suspended its antidumping duty on graphite electrodes from China for one year.[24] Brazil rescinded the antidumping order in September 2019.[25]
- India: India discontinued its original antidumping duties on graphite electrodes from China in 2009.[26] India subsequently initiated an investigation on graphite electrodes from China in May 2013, and imposed duties in February 2015. In August 2018, India announced the termination of these duties, effective September 6, 2018.[27]
- Mexico: On January 15, 2018, Mexico announced the results of its sunset review and terminated antidumping duties on graphite electrodes from China.[28]
- South Africa: In March 2014, South Africa terminated its investigation following the closure of the petitioning producer, GrafTech South Africa.[29]

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[24] *Global Trade Alert,* "Brazil: Temporary Suspension of Antidumping Duty on Imports of Graphite Electrodes from China," https://www.globaltradealert.org/intervention/18085/anti-dumping/brazil-temporary-suspension-of-antidumping-duty-on-imports-of-graphite-electrodes-from-china, retrieved July 9, 2019.

[25] HKTDC Research, "Brazil Rescinds AD Duty Order on Graphite Electrodes," September 24, 2019, https://hkmb.hktdc.com/en/1X0AINY5/hktdc-research/Brazil-Rescinds-AD-Duty-Order-on-Graphite-Electrodes, retrieved December 10, 2019.

[26] *Government of India, Ministry of Commerce & Industry, Directorate General of Anti-dumping & Allied Duties, Final Findings*, June 24, 2009, http://www.dgtr.gov.in/sites/default/files/Final-Findings-SSR_3.pdf, retrieved July 9, 2019.

[27] *SteelMint*, "Surge in Indian Imports of Chinese Graphite Electrodes," February 18, 2019, https://china.steelmint.com/2019/02/18/surge-in-indian-imports-of-chinese-graphite-electrodes/, retrieved July 9, 2019; *The Economic Times,* "Antidumping Duty Imposed on Imports of Graphite Electrodes," February 16, 2015, https://economictimes.indiatimes.com/news/economy/policy/antidumping-duty-imposed-on-imports-of-graphite-electrodes/articleshow/46263881.cms?from=mdr, retrieved July 9, 2019; *Global Trade Alert*, "India: Termination of Definitive Antidumping Duty on Imports of Graphite Electrodes from China," https://www.globaltradealert.org/intervention/18289/anti-dumping/india-definitive-antidumping-duty-on-imports-of-graphite-electrodes-from-china, retrieved July 9, 2019.

[28] *Asian Metal*, "Mexico Makes Negative Final Determination on AD for Graphite Electrode from China," January 18, 2018, http://www.asianmetal.com/news/data/1397619/Mexico%20makes%20negative%20final%20determination%20on%20AD%20for%20graphite%20electrode%20from%20China, retrieved July 9, 2019.

[29] *Government Gazette*, No. 37461, March 28, 2014, p. 68, https://www.greengazette.co.za/notices/international-trade-administration-commission-of-south-africa-termination-of-the-investigation-into-the-alleged-dumping-of-graphite-electrodes-for-use-in-furnaces-originating-in_20140328-GGN-37461-00236.pdf, retrieved July 9, 2019.

Global market

Global supply

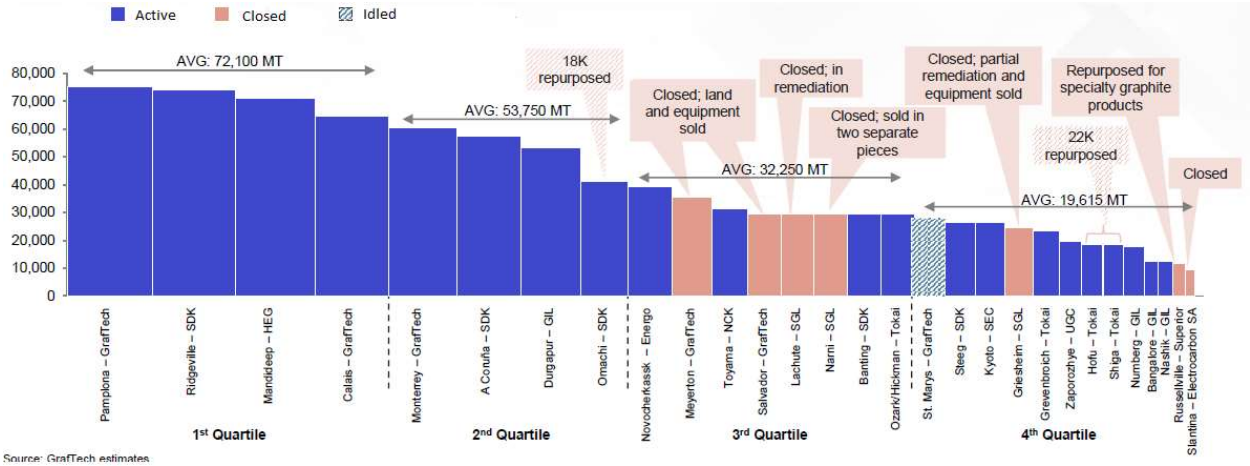
Global graphite electrode production capacity declined by 19 percent during 2014–17, falling from 1.9 million metric tons in 2014 to 1.5 million metric tons in 2017.[30] Firms closed seven graphite electrode plants outside of China during 2014 to 2017, idled an additional plant, and reduced production capacity at three plants (figure IV-7).[31] As a result of the closures, the global capacity utilization rate increased from 68 percent in 2014 to 87 percent in 2017.[32]

[30] *Massif Capital, Graftech (EAF), Investment Review*, July 2018, p. 2, https://static1.squarespace.com/static/55cbe47de4b0a1e3b9b911fe/t/5b56268ef950b7be70cad9d7/1532372622855/GrafTech+%28EAF%29+Massif+Capital+22JUL2018.pdf, retrieved June 13, 2019.

[31] *GrafTech International, Credit Suisse 31st Annual Basic Materials Conference*, September 12–13, 2018, p. 20, http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njk5NzcyfENoaWxkSUQ9NDExMjk2fFR5cGU9MQ==&t=1, retrieved June 13, 2019.

[32] *Massif Capital, Graftech (EAF), Investment Review,* July 2018, p. 2, https://static1.squarespace.com/static/55cbe47de4b0a1e3b9b911fe/t/5b56268ef950b7be70cad9d7/1532372622855/GrafTech+%28EAF%29+Massif+Capital+22JUL2018.pdf, retrieved June 13, 2019.

Figure IV-7
Graphite electrodes: Global production capacity, 2017, and plant closures 2014–17



Note.--2017 production capacity for all firms except GrafTech. For GrafTech, production capacity data are for 2018.

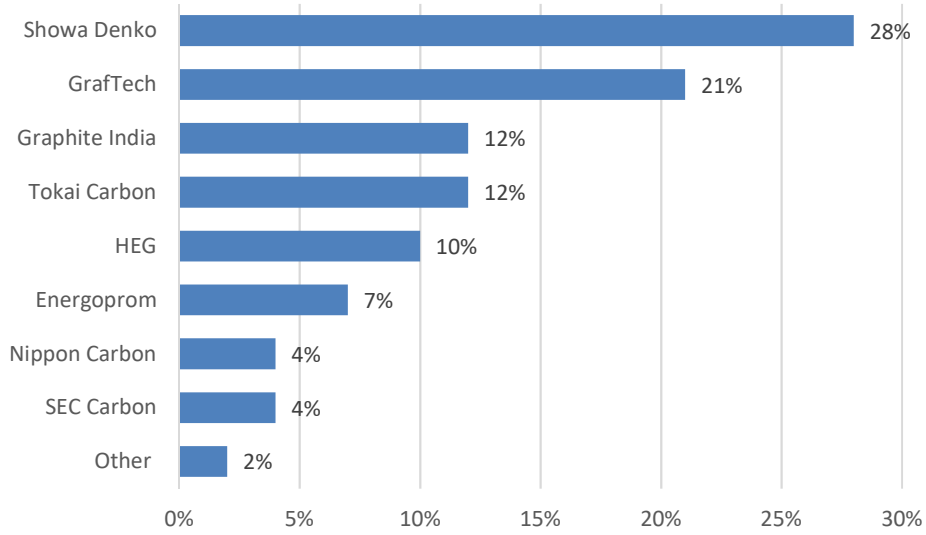
Source: *GrafTech International, Credit Suisse 31st Annual Basic Materials Conference,* September 12–13, 2018, p. 20, http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njk5NzcyfENoaWxkSUQ9NDExMjk2fFR5cGU9MQ==&t=1, retrieved June 13, 2019.

The leading global graphite electrode producers in 2017, excluding China, were Showa Denko (28 percent of capacity), GrafTech (21 percent), Graphite India Ltd. (12 percent), Tokai Carbon (12 percent), and HEG Ltd. (10 percent) (figure IV-8). Overall, the eight largest firms outside of China account for 98 percent of global production capacity.[33]

[33] *Credit Suisse, Graftech International Ltd.*, May 14, 2018, p. 28, https://research-doc.credit-suisse.com/docView?language=ENG&format=PDF&sourceid=csplusresearchcp&document_id=1080449881&serialid=SwEAHbbwdd7RerF1fGkc0KaeSJ4lNpHcR2kRDqKW5Pc%3D&cspId=1766774152791285760, retrieved June 17, 2019.

Figure IV-8

Graphite electrodes: Leading global graphite electrode producers, excluding China, 2017



Source: *Credit Suisse, Graftech International Ltd.,* May 14, 2018, p. 28, https://research-doc.credit-suisse.com/docView?language=ENG&format=PDF&sourceid=csplusresearchcp&document_id=1080449881&serialid=SwEAHbbwdd7RerF1fGkc0KaeSJ4lNpHcR2kRDqKW5Pc%3D&cspId=1766774152791285760, retrieved June 17, 2019.

Global demand

Global graphite electrode demand declined by 4.3 percent in 2015, then increased by 8.3 percent from 2015 to 2017 (table IV-9).[34] Overall trends generally follow those in the steel industry, where production declined 3.0 percent in 2015, then increased 4.4 percent during 2015 to 2017.[35] Graphite electrode demand increased faster than global steel production due to EAF production increasing more rapidly than basic oxygen furnace (BOF) production.[36]

Table IV-9
Graphite electrodes: Global graphite electrode capacity and demand, 2014–17

	2014	2015	2016	2017
	Quantity (1,000 metric tons)			
Capacity				
Non-China	900	872	830	830
China	1000	1000	800	700
Total	1,900	1,872	1,630	1,530
Demand				
EAF	782	733	752	837
BOF	472	466	463	462
Non-Steel	33	33	34	35
Total	1,287	1,232	1,249	1,334
Implied total utilization	67.7%	65.8%	76.6%	87.2%

Source: *Massif Capital, Graftech (EAF), Investment Review*, July 2018, p. 2, https://static1.squarespace.com/static/55cbe47de4b0a1e3b9b911fe/t/5b56268ef950b7be70cad9d7/1532372622855/GrafTech+%28EAF%29+Massif+Capital+22JUL2018.pdf, retrieved June 13, 2019.

[34] *Massif Capital, Graftech (EAF), Investment Review,* July 2018, p. 2, https://static1.squarespace.com/static/55cbe47de4b0a1e3b9b911fe/t/5b56268ef950b7be70cad9d7/1532372622855/GrafTech+%28EAF%29+Massif+Capital+22JUL2018.pdf, retrieved June 13, 2019.

[35] *World Steel Association, Steel Statistical Yearbook 2018*, November 2018, p. 2, https://www.worldsteel.org/en/dam/jcr:e5a8eda5-4b46-4892-856b-00908b5ab492/SSY_2018.pdf, retrieved July 4, 2019.

[36] *Massif Capital, Graftech (EAF), Investment Review*, July 2018, p. 2, https://static1.squarespace.com/static/55cbe47de4b0a1e3b9b911fe/t/5b56268ef950b7be70cad9d7/1532372622855/GrafTech+%28EAF%29+Massif+Capital+22JUL2018.pdf, retrieved June 13, 2019; *World Steel Association, Steel Statistical Yearbook 2018*, November 2018, pp. 2, 19, 22, https://www.worldsteel.org/en/dam/jcr:e5a8eda5-4b46-4892-856b-00908b5ab492/SSY_2018.pdf, retrieved July 4, 2019.

Global exports

Global exports of carbon electrodes increased from 806,000 metric tons in 2016 to 1.1 million metric tons in 2018 (table IV-10). The largest exporters by volume were China (333,232 metric tons), the Netherlands (187,547 metric tons), Japan (104,630 metric tons), Spain (102,744 metric tons), and India (81,178 metric tons). The largest exporters by value were China, India, Spain, and Japan.[37]

Table IV-10
Carbon electrodes: Global exports by country, 2016-18

Country	Calendar year		
	2016	2017	2018
	Quantity (metric tons)		
United States	21,460	18,989	15,909
China	157,167	237,326	333,232
Netherlands	164,151	176,784	187,547
Japan	88,656	98,670	104,630
Spain	98,929	97,765	102,744
India	56,018	80,692	81,178
Russia	41,709	39,023	47,432
All other countries	178,614	224,601	236,044
Total exports	806,703	973,850	1,108,716
	Value (1,000 dollars)		
United States	66,307	67,156	152,590
China	268,367	1,153,100	2,948,276
Netherlands	107,380	135,695	205,868
Japan	239,679	243,961	760,515
Spain	229,403	254,126	944,532
India	120,864	277,584	1,065,081
Russia	94,506	137,055	323,224
All other countries	415,478	643,982	1,910,897
Total exports	1,541,983	2,912,658	8,310,981

Table continued on next page.

[37] Official exports statistics under HS subheading 8545.11 reported by various national statistical authorities in the Global Trade Atlas database, accessed November 19, 2019.

Table IV-10--Continued
Carbon electrodes: Global exports by country, 2016-18

Country	Calendar year		
	2016	2017	2018
	Unit value (dollars per metric ton)		
United States	3,090	3,537	9,592
China	1,708	4,859	8,848
Netherlands	654	768	1,098
Japan	2,703	2,472	7,269
Spain	2,319	2,599	9,193
India	2,158	3,440	13,120
Russia	2,266	3,512	6,815
All other countries	2,326	2,867	8,096
Total exports	1,911	2,991	7,496
	Share of quantity (percent)		
United States	2.7	1.9	1.4
China	19.5	24.4	30.1
Netherlands	20.3	18.2	16.9
Japan	11.0	10.1	9.4
Spain	12.3	10.0	9.3
India	6.9	8.3	7.3
Russia	5.2	4.0	4.3
All other countries	22.1	23.1	21.3
Total exports	100.0	100.0	100.0

Notes.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. In Quantity these five countries data are not included: "Australia, New Zealand, Taiwan, Colombia and Peru " because they have different units. These countries data are included in values and unit values. Data include nonsubject products.

Source: Official exports statistics under HS subheading 8545.11 reported by various national statistical authorities in the Global Trade Atlas database, accessed November 19, 2019.

Part V: Pricing data

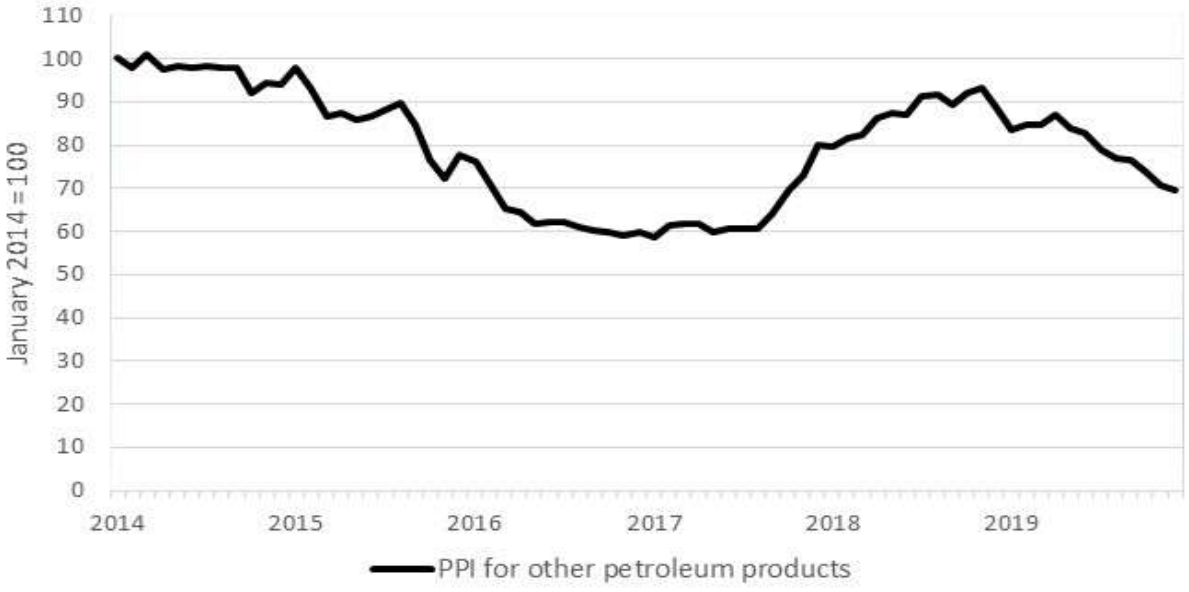
Factors affecting prices

Raw material costs

Raw materials represented *** percent of U.S. producers' costs of goods sold in 2018, up from *** percent in 2017 and *** percent in 2016. As noted in Part I, SD graphite electrodes are made from a range of different petroleum coke products, with needle coke representing the most expensive type, typically used in larger quantities to make ultra-high-powered (UHP) SD graphite electrodes.

The Producer Price Index (PPI) for other petroleum products, including coke oven products (such as petroleum coke), decreased substantially from January 2014 to early 2016, and then rose substantially from mid-2017 until late 2018 (figure V-1). Since then, it has declined, but has not returned to its lowest levels of 2017.

Figure V-1
PPI for other petroleum products, 2014-2019



Source: Data from Bureau of Labor Statistics, retrieved from FRED, Federal Reserve Bank of St. Louis, November 25, 2019, and February 5, 2020.

Regarding needle coke specifically, global prices of needle coke increased substantially in 2017 and 2018, reflecting the greater demand from the lithium-ion battery industry, the recovery in demand from the graphite electrode industry, and limitations on the ability of

needle coke producers to increase supply rapidly.[1] Petroleum needle coke spot prices decreased from approximately $1,000/metric ton in 2014 to approach $500/metric ton in 2016.[2] Prices subsequently increased during 2017, and in 2018 were more than $2,500/metric ton. Prices continued to increase in 2019, and were approximately $3,500 during January to March 2019, before increasing to almost $4,500/metric ton in May 2019.[3] Purchaser *** submitted *** describing how there has been a continuing shortage of premium needle coke, and that adding additional needle coke capacity will take at least a year (although no such additions have been announced).

*** indicated that the costs of raw materials used to make SD graphite electrodes had increased since January 1, 2014. *** attributed the increase in costs to ***. Among other importers, *** stated that the lithium-ion battery industry's demand for needle coke had caused a "drastic" increase in prices for needle coke.[4] *** described "the chaos of 2017" as leading to higher raw material costs that increased SD graphite electrode prices, although it added that SD graphite electrode prices have since declined. *** indicated that raw material costs had fluctuated with no clear trend.

When asked to anticipate future cost trends, *** anticipated that raw material costs would fluctuate. *** anticipated a decrease in raw material costs because ***. Among importers (other than ***), six anticipated

[1] *Credit Suisse, GrafTech International Ltd.*, May 14, 2018, pp. 24–26, https://research-doc.credit-suisse.com/docView?language=ENG&format=PDF&sourceid=csplusresearchcp&document_id=1080449881&serialid=SwEAHbbwdd7RerF1fGkc0KaeSJ4lNpHcR2kRDqKW5Pc%3D&cspId=1766774152791285760, retrieved June 17, 2019.

[2] *Credit Suisse, GrafTech International Ltd.,* May 14, 2018, p. 24, https://research-doc.credit-suisse.com/docView?language=ENG&format=PDF&sourceid=csplusresearchcp&document_id=1080449881&serialid=SwEAHbbwdd7RerF1fGkc0KaeSJ4lNpHcR2kRDqKW5Pc%3D&cspId=1766774152791285760, retrieved June 17, 2019.

[3] *Credit Suisse, GrafTech International Ltd.*, May 14, 2018, p. 24, https://research-doc.credit-suisse.com/docView?language=ENG&format=PDF&sourceid=csplusresearchcp&document_id=1080449881&serialid=SwEAHbbwdd7RerF1fGkc0KaeSJ4lNpHcR2kRDqKW5Pc%3D&cspId=1766774152791285760, retrieved June 17, 2019.; *SteelMint,* "IMO 2020 Regulation May Jolt Global Graphite Electrode Industry," June 3, 2019, https://events.steelmintgroup.com/imo-2020-regulation-may-jolt-global-graphite-electrode-industry/, retrieved July 4, 2019.

[4] Lithium-ion battery production also requires needle coke, although lithium-ion batteries are not similar to SD graphite electrodes in many other ways.

fluctuating raw material costs, one anticipated an overall decrease, and two anticipated no change. *** stated that it assumes that raw material costs will remain stable.

Seven purchasers indicated that they were familiar with the prices of raw materials used in SD graphite electrode production, and three indicated that they were not. Six purchasers indicated that information on raw materials prices had affected their firm's negotiations or contracts to purchase SD graphite electrodes since January 1, 2014 (and three indicated that such information had not). Four of those six purchasers described following needle coke prices, with *** indicating that needle coke can account for 50 percent of the cost of SD graphite electrodes. Others noted that needle coke pricing fluctuated between 2014 to 2018, or that their firms also tracked energy prices.

Transportation costs to the U.S. market

Transportation costs for SD graphite electrodes shipped from China to the United States were 0.3 percent during 2018. These estimates were derived from official import data and represent the transportation and other charges on imports.[5]

U.S. inland transportation costs

*** reported that they typically arrange transportation to their customers. U.S. importers ***[6] indicated that they sell Chinese SD graphite electrodes from their storage facilities, while *** sells from its point of importation. U.S. producers reported that their U.S. inland transportation costs ranged from *** to *** percent while responding importers reported costs of *** to *** percent.

[5] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2018 and then dividing by the customs value based on the HTS subheading 8545.11.0010. In the original investigation, these costs were 9.0 percent in 2007.

[6] ***. See staff telephone interview with ***, November 21, 2019.

Pricing practices

Pricing methods

U.S. producers and importers reported using both transaction-by-transaction negotiations and contracts to set prices, as presented in table V-1.

Table V-1
SD graphite electrodes: U.S. producers' and importers' reported price setting methods, by number of responding firms

Method	U.S. producers	Importers
Transaction-by-transaction	***	8
Contract	***	7
Set price list	***	---
Other	***	---
Responding firms	***	11

Note.--The sum of responses down may not add up to the total number of responding firms as each firm was instructed to check all applicable price setting methods employed.

Source: Compiled from data submitted in response to Commission questionnaires.

Seven purchasers indicated that their purchases of SD graphite electrodes usually involved negotiations between supplier and purchaser. These purchasers described negotiating over volumes, prices, terms, quality, availability, and delivery schedules. Two of these purchasers indicated that they did not quote competing prices during negotiations. Three other purchasers indicated that their purchases of SD graphite electrodes usually did not involve negotiations.

Four purchasers reported that they purchase product annually, three purchase quarterly, two purchase monthly, and one purchases weekly (or monthly if unable to secure weekly supplies). All ten responding purchasers reported that they did not expect their purchasing patterns to change in the next two years. *** elaborated that while most U.S. producers are not planning to increase their capacities, they have related plants outside the United States and can import product. Most (7 of 10) purchasers contact 1 to 4 suppliers before making a purchase, although three purchasers listed ranges that went as high as 5 to 7 suppliers maximum.

As shown in table V-2, U.S. producers and importers reported their 2018 U.S. commercial shipments of SD graphite electrodes by type of sale. U.S. producers and importers reported selling a majority of their SD graphite electrodes under short-term contracts. Among U.S. producers, *** used mostly ***, while *** used mostly ***.

Table V-2
SD graphite electrodes: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2018

Type of sale	U.S. producers	Importers
Long-term contracts	***	***
Annual contracts	***	***
Short-term contracts	***	***
Spot sales	***	***

Note.--Importer data is based on questionnaire responses of ***.

Source: Compiled from data submitted in response to Commission questionnaires.

For U.S. producer/importer ***, the average duration of a short-term contract was *** days, and the average duration of a long-term contract was *** years. For ***, the average duration of a long-term contract was *** years. *** contracts ***. *** contracts ***.

For importer ***, the average duration of a short-term contract was *** days.[7] Importers *** stated that their contracts do not allow price renegotiation, and are not indexed to raw material prices. *** stated that their contracts fix price and quantity. *** stated that its contracts fix price.

Sales terms and discounts

U.S. producer/importer GrafTech reported offering *** discounts while Tokai Carbon reported offering *** discounts. Among other importers, six indicated that they offer no discounts, *** reported offering annual total volume discounts, and *** reported offering early payment discounts.

*** U.S. producers typically quote prices on a delivered basis, as do five importers. Importer *** indicated that it quotes prices f.o.b. ***.

Price leadership

When asked to identify price leaders in the SD graphite electrode market, four purchasers named GrafTech. *** described GrafTech as leading because it owned a needle coke production plant in the United States, and a SD graphite electrode plant "strategically

[7] ***.

located" in Mexico. It continued that these two attributes allowed GrafTech to provide product with fast delivery at lower prices (including because of currency issues with the Mexican peso compared to the U.S. dollar). *** also cited GrafTech's raw material production as allowing its price leadership,[8] and *** described GrafTech as usually the first supplier to publish price lists. Three other purchasers indicated that they did not know of any price leaders, and two indicated that pricing from all suppliers was the same or there was no price leader.

Price data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following SD graphite electrode products shipped to unrelated U.S. customers during January 2016-September 2019. Products 2 and 3 are the same as products 4 and 5 in the original investigations. At the suggestion of domestic interested party Tokai Carbon, product 1 was added to this review.[9]

Product 1.-- RP graphite electrodes, 350 mm. (14 inches) nominal diameter x 1,800 mm. (72 inches) nominal length, 3 TPI taper connecting pin.

Product 2.-- UHP graphite electrodes, 350 mm. (14 inches) nominal diameter x 1,800 mm. (72 inches) nominal length, 3 TPI taper connecting pin.

Product 3.-- UHP graphite electrodes, 400 mm. (16 inches) nominal diameter x 1,800 mm. (72 inches) nominal length, 3 TPI taper connecting pin.

[8] See Part III for information on ***.

[9] See Tokai Carbon's comments on draft questionnaires, p. 2, September 19, 2019.

*** provided usable pricing data for sales of products 2 and 3.[10] No importers provided any pricing data, ***. Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' shipments of SD graphite electrodes in 2018. Price data for products 2-3 are presented in table V-3 and figures V-2 to V-3.

After receipt of the questionnaires, staff contacted U.S. producers and the largest Chinese importer and requested data on sales quantities and values for 14 to 16 inch HP SD graphite electrodes, ***.[11] ***. Data for 14 to 16 inch HP SD graphite electrodes are presented in table V-4.

[10] Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

[11] See email from ***, and email from ***.

Table V-3
SD graphite electrodes: Weighted-average f.o.b. prices and quantities of domestic products 2 and 3, by quarter, January 2016-September 2019

Period	United States product 2		United States product 3	
	Price (dollars per pound)	Quantity (pounds)	Price (dollars per pound)	Quantity (pounds)
2016: Jan.-Mar.	***	***	***	***
Apr.-June	***	***	***	***
July-Sept.	***	***	***	***
Oct.-Dec.	***	***	***	***
2017: Jan.-Mar.	***	***	***	***
Apr.-June	***	***	***	***
July-Sept.	***	***	***	***
Oct.-Dec.	***	***	***	***
2018: Jan.-Mar.	***	***	***	***
Apr.-June	***	***	***	***
July-Sept.	***	***	***	***
Oct.-Dec.	***	***	***	***
2019: Jan.-Mar.	***	***	***	***
Apr.-June	***	***	***	***
July-Sept.	***	***	***	***

Product 2: UHP graphite electrodes, 350 mm. (14 inches) nominal diameter x 1,800 mm. (72 inches) nominal length, 3 TPI taper connecting pin.

Product 3: UHP graphite electrodes, 400 mm. (16 inches) nominal diameter x 1,800 mm. (72 inches) nominal length, 3 TPI taper connecting pin.

Source**:** Compiled from data submitted in response to Commission questionnaires.

Figure V-2
SD graphite electrodes: Weighted-average prices and quantities of domestic product 2, by quarter, January 2016-September 2019

* * * * * * *

Product 2: UHP graphite electrodes, 350 mm. (14 inches) nominal diameter x 1,800 mm. (72 inches) nominal length, 3 TPI taper connecting pin.

Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-3
SD graphite electrodes: Weighted-average prices and quantities of domestic product 3, by quarter, January 2016-September 2019

* * * * * * *

Product 3: UHP graphite electrodes, 400 mm. (16 inches) nominal diameter x 1,800 mm. (72 inches) nominal length, 3 TPI taper connecting pin.

Source: Compiled from data submitted in response to Commission questionnaires.

Table V-4
SD graphite electrodes: Quantity, value, and average unit value of U.S. shipments for 14 to 16 inch HP SD graphite electrodes

Item	Calendar year			January-September	
	2016	2017	2018	2018	2019
Quantity (metric tons)	***	***	***	***	***
Value ($1,000)	***	***	***	***	***
Average unit value ($ per pound)	***	***	***	***	***

Source: Compiled from data ***, and staff calculations.

Price trends

Prices increased substantially during January 2016-September 2019. Table V-5 summarizes the price trends by product. As shown in the table, domestic prices *** over the period for which data were collected for each product, with most of the increase coming after 2017.[12]

Table V-5
SD graphite electrodes: Summary of weighted-average f.o.b. prices for products 2-3 from the United States

Item	Number of quarters	Low price (per pound)	High price (per pound)	Change in price[1] (percent)
Product 2:	***	***	***	***
Product 3:	***	***	***	***

[1] Percentage change from the first quarter in which data were available to the last quarter in which price data were available.

Source: Compiled from data submitted in response to Commission questionnaires.

Price comparisons

No pricing comparisons for the pricing products were available in this review. In the original investigation, the Commission collected price data for five price items.[13] Subject imports from China were priced lower than domestic product in 54 of 60 comparisons, by

[12] ***. Staff telephone interview with ***, December 16, 2019.

[13] The Commission collected data for two HP graphite electrodes (10 inches and 12 inches in diameter) and three UHP graphite electrodes (10 inches, 14 inches, and 16 inches in diameters). *Small Diameter Graphite Electrodes from China*, Inv. No. 731-TA-1143 (Final), USITC Publication 4062, February 2009, p. V-4.

margins ranging from 2.3 to 36.2 percent; subject imports from China were priced higher than domestic product in 6 comparisons, with margins ranging from 0.1 to 17.4 percent.[14]

*** stated that since 2018, the price for SD graphite electrodes has been higher than the prices for larger diameter graphite electrodes because of the yield and production loss in producing smaller electrodes.

Relative price trends

Nine purchasers indicated that there had been a change in the price of U.S. SD graphite electrodes since January 1, 2014, and five indicated that there had been a change in the price of Chinese SD graphite electrodes. Four purchasers indicated that U.S. and Chinese prices had changed by the same percentage, two indicated that prices of U.S. product were now higher than they had been relative to Chinese prices, and one indicated that prices of U.S. product were now lower than they had been relative to Chinese prices. *** stated that the price of SD graphite electrodes produced outside China has increased 12-fold due to the shortage of product in the United States, and that this price increase has also come from nonsubject producers that are related to U.S. producers.

U.S. producers and importers were asked to compare market prices of SD graphite electrodes in U.S. and non-U.S. markets, if known. U.S. producer *** described U.S. prices as *** higher than in other markets. ***, importers *** described U.S. prices as higher than in other markets, and importer *** stated that foreign end users have "significant" advantages over U.S. end users due to the absence of foreign duties on SD graphite electrodes. Importer *** stated that, while U.S. prices are currently around $2/pound, prices in Brazil (with no duties on Chinese material) are approximately $0.88/pound. However, importer *** described Asian prices as higher than U.S. prices, and importer *** stated that prices in the United States, Western Europe, Brazil, and Mexico were comparable.

[14] *Small Diameter Graphite Electrodes from China*, Inv. No. 731-TA-1143 (Final), USITC Publication 4062, February 2009, p. V-7. The Commission also received 21 lost sale allegations from *** in the original investigation, while *** indicated that certain purchasers no longer asked it to bid, or did so only to establish a benchmark. Of the *** lost sales allegations, purchasers agreed with *** of the allegations, specifically ***. Office of Investigations Memorandum INV-GG-004, *Small Diameter Graphite Electrodes from China, Inv. No. 731-TA-1143 (Final),* Staff Report, table V-8 and p. V-19.

APPENDIX A

FEDERAL REGISTER NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, *Federal Register* notices issued by the Commission and Commerce during the current proceeding.

Citation	Title	Link
74 FR 8775 February 26, 2009	*Commerce's antidumping duty order on small diameter graphite electrodes from China*	https://www.federalregister.gov/documents/2009/02/26/E9-4126/antidumping-duty-order-small-diameter-graphite-electrodes-from-the-peoples-republic-of-china
84 FR 18580 May 1, 2019	*Commission's institution of five-year review*	https://www.federalregister.gov/documents/2019/05/01/2019-08669/small-diameter-graphite-electrodes-from-china-institution-of-a-five-year-review
84 FR 18477 May 1, 2019	*Commerce's initiation of five-year review*	https://www.federalregister.gov/documents/2019/05/01/2019-08825/initiation-of-five-year-sunset-reviews
84 FR 43615 August 5, 2019	*Commission's determination to conduct full five-year review*	https://www.federalregister.gov/documents/2019/08/21/2019-18010/small-diameter-graphite-electrodes-from-china-notice-of-commission-determination-to-conduct-a-full
84 FR 44852 August 27, 2019	*Commerce's final results of expedited Second Sunset Review of the Antidumping duty order*	https://www.federalregister.gov/documents/2019/08/27/2019-18439/small-diameter-graphite-electrodes-from-the-peoples-republic-of-china-final-results-of-expedited
84 FR 51619 September 23, 2019	*Commission's scheduling of the review*	https://www.federalregister.gov/documents/2019/09/30/2019-21065/small-diameter-graphite-electrodes-from-china-scheduling-of-a-full-five-year-review
85 FR 4339 January 16, 2020	*Cancellation of hearing for Second Full Five-Year Review*	https://www.federalregister.gov/documents/2020/01/24/2020-01153/small-diameter-graphite-electrodes-from-china-cancellation-of-hearing-for-second-full-five-year

Note.–The press release announcing the Commission's determinations concerning adequacy and the conduct of a full or expedited review can be found at https://www.usitc.gov/small_diameter_graphite_electrodes_china.htm_2 The Commission's explanation of its determinations can be found at https://pubapps2.usitc.gov/sunset/caseProf/show/11253

APPENDIX B

NOTICE OF HEARING CANCELLATION

KELLEY DRYE & WARREN LLP

A LIMITED LIABILITY PARTNERSHIP

WASHINGTON HARBOUR, SUITE 400

3050 K STREET, NW

WASHINGTON, D.C. 20007-5108

(202) 342-8400

FACSIMILE

(202) 342-8451

www.kelleydrye.com

NEW YORK, NY

CHICAGO, IL

HOUSTON, TX

LOS ANGELES, CA

SAN DIEGO, CA

PARSIPPANY, NJ

STAMFORD, CT

BRUSSELS, BELGIUM

AFFILIATE OFFICES

MUMBAI, INDIA

January 15, 2020

USITC Investigation No. 731-TA-1143 (Second Review)
PUBLIC DOCUMENT

The Honorable Lisa R. Barton
Secretary
U.S. International Trade Commission
500 E Street, S.W., Room 112
Washington, DC 20436

Re: Small Diameter Graphite Electrodes from China

Dear Secretary Barton:

On behalf of Tokai Carbon GE LLC ("Tokai Carbon") and GrafTech International Ltd. ("GrafTech"), domestic producers of small diameter graphite electrodes (hereinafter, "the domestic industry"), we hereby request that the Commission consider whether the hearing in this review, scheduled for Thursday, January 23, 2020, should be cancelled given that the domestic industry is unopposed in this proceeding and that no other party is expected to request to appear at the hearing.[1] If the Commission is amenable, the domestic industry proposes that the submission of written responses to the Commission's questions by a date determined by the Commission in lieu of a hearing may be appropriate given considerations of administrative efficiency and costs under the circumstances of this review.

The domestic industry strongly supports the continuation of the antidumping duty order on small diameter graphite electrodes from China and is willing and able to fully participate in the hearing. As noted in our request to appear also filed today, senior representatives of both Tokai Carbon and GrafTech – the only two members of the domestic industry during the period of review – are planning to travel to Washington, D.C. to appear before the Commission. Each

[1] Technically, the deadline to file a request to appear is today. While it is possible that a company could file a letter today seeking to appear, given the lack of any entries of appearance or the submission of any respondent briefs, we believe that is highly unlikely (but will be confirmable later today). We are submitting this request today, however, to expedite consideration given the upcoming three-day weekend (Martin Luther King, Jr. Day on January 20, 2020).

PUBLIC DOCUMENT

company recognizes the value that a hearing can have in affording the Commission an opportunity to achieve a complete understanding of the factual and legal issues involved in the review. The domestic industry witnesses, however, will likely be the only panel to appear at the hearing. Moreover, we anticipate that the domestic witnesses' public testimony will focus on the points that have been previously made through our substantive response to the Commission's notice of institution of this review, individual company questionnaire responses (to the extent certain topics can be publicly discussed), and the domestic industry's prehearing brief submitted to the Commission on January 14, 2020.

Without a respondent panel, a hearing is unlikely to raise any new factual or legal issues not previously presented to the Commission. The level of detail that can be discussed in a public hearing will also necessarily be limited given that there are only two domestic producers in this industry. The trade and financial data provided by the domestic industry has necessarily been redacted in the prehearing staff report and, thus, domestic industry witnesses will not be in a position to answer questions regarding the database in this review without revealing business proprietary information. In other words, it is likely that many specific questions from the Commission regarding the domestic producers' operations and experiences in the U.S. market will likely have to be answered post-hearing in a confidential submission in any event. Just as we would be pleased to address the Commission's questions in the context of a confidential post-hearing brief, we would be pleased to address those same questions in a confidential written submission in lieu of a hearing.

We reiterate that the proposal to cancel the hearing is not due to any lack of interest from the domestic industry. The domestic industry witnesses identified in our January 15, 2020 letter will attend and participate fully should the Commission determine to hold the hearing. If the Commission, however, agrees there is no need for a hearing, we ask that you let us know as soon as possible given the upcoming three-day weekend and because the industry witnesses will be traveling to Washington on Wednesday, January 22, 2020, to prepare for the hearing.

Thank you for your attention to this matter.

Respectfully submitted,

R. ALAN LUBERDA
BROOKE M. RINGEL

Counsel to the Tokai Carbon GE LLC and
GrafTech International Ltd.

APPENDIX C

SUMMARY DATA COMPILED IN CURRENT AND PRIOR PROCEEDINGS

Table C-1
SD graphite electrodes: Summary data concerning the U.S. market, 2016-18, January to September 2018, and January to September 2019

(Quantity=metric tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per metric ton; Period changes=percent--exceptions noted; Productivity=metric tons per 1,000 hours)

	Reported data					Period changes			
	Calendar year			January to September		Comparison years			Jan-Sep
	2016	2017	2018	2018	2019	2016-18	2016-17	2017-18	2018-19
U.S. consumption quantity:									
Amount	***	***	***	***	***	▲***	▲***	▲***	▼***
Producers' share (fn1)	***	***	***	***	***	▲***	▲***	▲***	▼***
Importers' share (fn1):									
China	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▼***	▼***	▼***	▲***
U.S. consumption value:									
Amount	***	***	***	***	***	▲***	▲***	▲***	▼***
Producers' share (fn1)	***	***	***	***	***	▲***	▲***	▲***	▲***
Importers' share (fn1):									
China	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▼***	▼***	▼***	▼***
U.S. imports from:									
China:									
Quantity	484	1,198	2,899	2,730	852	▲498.4	▲147.3	▲142.0	▼(68.8)
Value	1,165	9,037	34,435	32,322	5,934	▲2,856.1	▲675.8	▲281.1	▼(81.6)
Unit value	$2,405	$7,544	$11,880	$11,841	$6,968	▲394.0	▲213.7	▲57.5	▼(41.2)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Nonsubject sources:									
Quantity	11,452	14,159	21,508	15,461	13,993	▲87.8	▲23.6	▲51.9	▼(9.5)
Value	31,662	36,857	90,039	59,291	76,002	▲184.4	▲16.4	▲144.3	▲28.2
Unit value	$2,765	$2,603	$4,186	$3,835	$5,432	▲51.4	▼(5.8)	▲60.8	▲41.6
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
All import sources:									
Quantity	11,937	15,357	24,406	18,190	14,844	▲104.5	▲28.7	▲58.9	▼(18.4)
Value	32,827	45,894	124,474	91,613	81,937	▲279.2	▲39.8	▲171.2	▼(10.6)
Unit value	$2,750	$2,989	$5,100	$5,036	$5,520	▲85.5	▲8.7	▲70.7	▲9.6
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. producers':									
Average capacity quantity	***	***	***	***	***	▲***	▼***	▲***	***
Production quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Capacity utilization (fn1)	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. shipments:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Export shipments:									
Quantity	***	***	***	***	***	▲***	***	▲***	▼***
Value	***	***	***	***	***	▲***	***	▲***	▼***
Unit value	***	***	***	***	***	▲***	***	▲***	▼***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	▲***	▲***	▲***	▼***
Hours worked (1,000s)	***	***	***	***	***	▲***	▲***	▲***	▼***
Wages paid ($1,000)	***	***	***	***	***	▲***	▲***	▲***	▼***
Hourly wages	***	***	***	***	***	▲***	▲***	▼***	▼***
Productivity	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit labor costs	***	***	***	***	***	▼***	▼***	▼***	▼***

Table continued on next page.

Table C-1--Continued
SD graphite electrodes: Summary data concerning the U.S. market, 2016-18, January to September 2018, and January to September 2019

(Quantity=metric tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per metric ton; Period changes=percent--exceptions noted; Productivity=metric tons per 1,000 hours)

	Reported data					Period changes			
	Calendar year			January to September		Comparison years			Jan-Sep
	2016	2017	2018	2018	2019	2016-18	2016-17	2017-18	2018-19
U.S. producers.--Continued									
Net sales:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Cost of goods sold (COGS)	***	***	***	***	***	▲***	▼***	▲***	▼***
Gross profit of (loss) (fn2)	***	***	***	***	***	▲***	▲***	▲***	▲***
SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▼***
Operating income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▲***	▲***
Net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▲***	▲***
Capital expenditures	***	***	***	***	***	▲***	▼***	▲***	▲***
Unit COGS	***	***	***	***	***	▲***	▼***	▲***	▲***
Unit SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit operating income or (loss) (fn2	***	***	***	***	***	▲***	▲***	▲***	▲***
Unit net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▲***	▲***
COGS/sales (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Operating inc. or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▲***	▲***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▲***	▲***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics using HTS statistical reporting numbers 8545.11.0010, accessed December 6th, 2019.

HISTORIC DATA

Table C-2
Small diameter graphite electrodes: Summary data concerning the U.S. market, 2005-07, January-September 2007, and January-September 2008

* * * * * * *

Table C-3
SDGE: U.S. producers' trade and financial data, 2005-07 and 2013

Item	2005	2006	2007	2013
Capacity	***	***	***	***
Production *(metric tons)*	***	***	***	***
Capacity utilization (*percent*)	***	***	***	***
U.S. shipments				
Quantity (*metric tons*)	***	***	***	***
Value (*1,000 dollars*)	***	***	***	***
Unit value (*dollars per metric ton*)	***	***	***	***
Net sales				
Quantity (*metric tons*)	***	***	***	***
Value (*1,000 dollars*)	***	***	***	***
Unit value (*dollars per metric ton*)	***	***	***	***
Cost of goods sold (*COGS*) *($1,000*)	***	***	***	***
Gross profit or (loss) *($1,000*)	***	***	***	***
SG&A *($1,000*)	***	***	***	***
Operating income or (loss) *($1,000*)	***	***	***	***
COGS/sales (*percent*)	***	***	***	***
Operating income or (loss)/sales (*percent*)	***	***	***	***

Source: Compiled from *Small Diameter Graphite Electrodes from China, Investigation No. 731-TA-1143 (Final)*, Memorandum INV-GG-004, January 23, 2009, p. C-3 (table C-1); and Response of GrafTech, SGL Carbon, and Superior Graphite to the notice of institution, February 3, 2014 (supplemented on February 28, 2014), exhibit 2.

Apparent U.S. consumption and market shares

Table I-4 presents U.S. shipments of domestic product, U.S. imports and apparent U.S. consumption in 2005-07 and 2013. Data on U.S. market shares during 2005-07 and 2013 are presented in Table I-5.

Table I-4
SDGE: U.S. shipments of domestic product, U.S. shipments of imports, and apparent U.S. consumption, 2005-07 and 2013

Item	2005	2006	2007	2013
	Quantity (metric tons)			
U.S. producers' U.S. shipments	***	***	***	***
U.S. shipments of imports from.--China	***	***	***	***
All other	***	***	***	***
Total imports	***	***	***	***
Apparent U.S. consumption	***	***	***	***
	Value (1,000 dollars)			
U.S. producers' U.S. shipments	***	***	***	***
U.S. shipments of imports from.--China	***	***	***	***
All other	***	***	***	***
Total imports	***	***	***	***
Apparent U.S. consumption	***	***	***	***

Note.--Because of rounding, figure may not add to total shown.

Note.–Data for 2013 are based on U.S. imports rather than U.S. shipments of imports.

Source: Small Diameter Graphite Electrodes from China, Investigation No. 731-TA-1143 (Final), Memorandum INV-GG-004, January 23, 2009, pp. IV-7 (table IV-3); official statistics of Commerce for HTS statistical reporting number 8545.11.0010.

APPENDIX D

FIRMS' NARRATIVES ON THE IMPACT OF THE ORDER AND THE LIKELY IMPACT OF REVOCATION

THIS TABLE IS CONFIDENTIAL IN ITS ENTIRETY

APPENDIX E

MONTHLY U.S. IMPORTS OF SD GRAPHITE ELECTRODES

Table E-1

SD graphite electrodes: Monthly Imports, January 2014 through December 2019

	China	Nonsubject	All imports
	Quantity (metric tons)		
2014: January	277	951	1,229
2014: February	267	833	1,100
2014: March	208	1,719	1,926
2014: April	215	1,114	1,330
2014: May	125	1,248	1,373
2014: June	257	1,382	1,640
2014: July	1,126	1,832	2,958
2014: August	1,377	1,460	2,837
2014: September	314	1,854	2,169
2014: October	19	1,606	1,625
2014: November	0	1,477	1,477
2014: December	20	2,106	2,126
2015: January	60	1,336	1,396
2015: February	0	1,614	1,614
2015: March	0	1,491	1,491
2015: April	0	1,286	1,286
2015: May	0	1,272	1,272
2015: June	0	1,041	1,041
2015: July	0	1,620	1,620
2015: August	0	1,175	1,175
2015: September	0	1,264	1,264
2015: October	0	1,213	1,213
2015: November	0	732	732
2015: December	0	484	484
2016: January	0	961	961
2016: February	19	954	973
2016: March	19	1,208	1,227
2016: April	0	950	950
2016: May	0	753	753
2016: June	0	544	544
2016: July	0	1,112	1,112
2016: August	0	1,180	1,180
2016: September	169	1,173	1,342
2016: October	156	877	1,034
2016: November	60	1,028	1,088
2016: December	61	713	774

Table continued on next page

Table E-1—Continued

SD graphite electrodes: Monthly Imports, January 2014 through December 2019

	China	Nonsubject	All imports
	Quantity (metric tons)		
2017: January	59	876	934
2017: February	59	988	1,047
2017: March	0	994	994
2017: April	96	1,197	1,293
2017: May	77	960	1,037
2017: June	137	971	1,108
2017: July	38	1,691	1,729
2017: August	37	1,184	1,221
2017: September	57	989	1,046
2017: October	92	1,912	2,004
2017: November	291	1,175	1,466
2017: December	255	1,221	1,477
2018: January	256	1,498	1,754
2018: February	175	1,229	1,404
2018: March	249	1,441	1,691
2018: April	213	1,973	2,186
2018: May	294	1,623	1,917
2018: June	213	1,605	1,818
2018: July	266	2,167	2,433
2018: August	261	2,180	2,441
2018: September	803	1,744	2,546
2018: October	92	1,994	2,086
2018: November	0	1,981	1,981
2018: December	77	2,073	2,149
2019: January	0	2,464	2,464
2019: February	58	1,221	1,279
2019: March	75	1,852	1,926
2019: April	135	966	1,101
2019: May	172	991	1,163
2019: June	140	1,124	1,264
2019: July	117	1,269	1,386
2019: August	39	2,207	2,246
2019: September	116	1,900	2,016
2019: October	56	1,203	1,259
2019: November	58	2,237	2,295
2019: December	18	2,472	2,490

Source: Official statistics of the U.S. Department of Commerce.