Silicon Metal from Angola, Australia, Laos, Norway, and Thailand

Investigation Nos. 701-TA-760–763 and
731-TA-1743–1746 (Preliminary)

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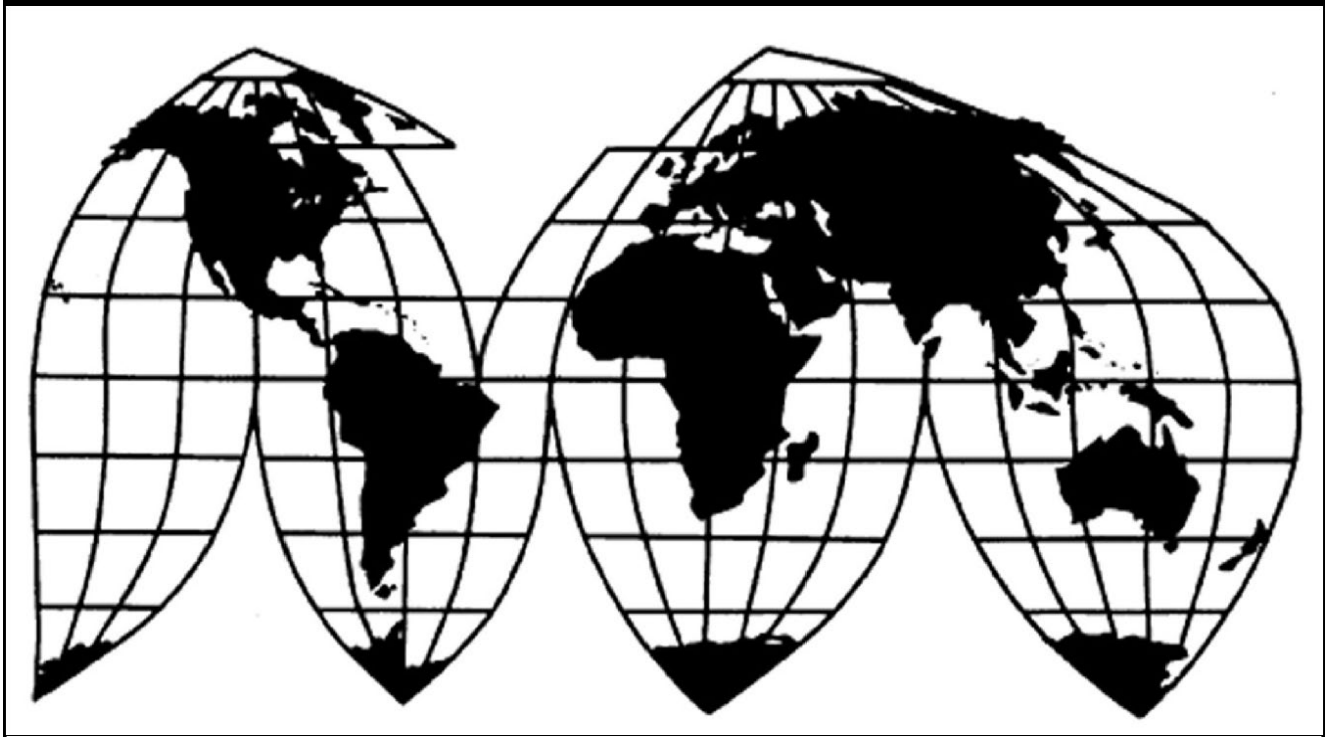

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Note.—Information that would reveal confidential operations of individual firms may not be published. Such information is identified by brackets ([ ]) in confidential reports and is deleted and replaced with asterisks (***) in public reports. Zeroes, null values, and undefined calculations are suppressed and shown as em dashes (—) in tables. If using a screen reader, we recommend increasing the verbosity setting.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-760-763 and 731-TA-1743-1746 (Preliminary)

Silicon Metal from Angola, Australia, Laos, Norway, and Thailand

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of silicon metal from Australia, Laos, and Norway, provided for in subheadings 2804.69.10 and 2804.69.50 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV") and subsidized by the governments of Australia, Laos, and Norway. The Commission also determines that there is a reasonable indication that a U.S. industry is threatened with material injury by reason of imports of silicon metal from Angola that are allegedly sold in the United States at LTFV and imports of silicon metal from Thailand that are allegedly subsidized by the government of Thailand.[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

Pursuant to section 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling, which will be published in the *Federal Register* as provided in § 207.21 of the Commission's rules, upon notice from the U.S. Department of Commerce ("Commerce") of affirmative preliminary determinations in the investigations under §§ 703(b) or 733(b) of the Act, or, if the preliminary determinations are negative, upon notice of affirmative final determinations in those investigations under §§ 705(a) or 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Any other party may file

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

[2] 90 FR 21741 May 21, 2025, and 90 FR 21746, May 21, 2025

an entry of appearance for the final phase of the investigations after publication of the final phase notice of scheduling. Industrial users, and, if the merchandise under investigation is sold at the retail level, representative consumer organizations have the right to appear as parties in Commission antidumping and countervailing duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations. As provided in section 207.20 of the Commission's rules, the Director of the Office of Investigations will circulate draft questionnaires for the final phase of the investigations to parties to the investigations, placing copies on the Commission's Electronic Document Information System (EDIS, https://edis.usitc.gov), for comment.

BACKGROUND

On April 24, 2025, Ferroglobe USA, Inc., Beverly, Ohio, and Mississippi Silicon LLC, Burnsville, Mississippi filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of subsidized imports of silicon metal from Australia, Laos, Norway, and Thailand and LTFV imports of silicon metal from Angola, Australia, Laos, and Norway. Accordingly, effective April 24, 2025, the Commission instituted countervailing duty investigation Nos. 701-TA-760-763 and antidumping duty investigation Nos. 731-TA-1743-1746 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference 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* of April 30, 2025 (90 FR 17978). The Commission conducted its conference on May 15, 2025. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of silicon metal from Australia, Laos, and South Korea that are allegedly sold in the United States at less than fair value ("LTFV") and subsidized by the governments of Australia, Laos, and Norway. We also find that there is a reasonable indication that an industry in the United States is threatened with material injury by reason of imports of silicon metal from Angola that are allegedly sold in the United States at LTFV and imports of silicon metal from Thailand that are allegedly subsidized by the government of Thailand.

I. The Legal Standard for Preliminary Determinations

The legal standard for preliminary antidumping and countervailing duty determinations requires the Commission to determine, based upon the information available at the time of the preliminary determinations, whether there is a reasonable indication that a domestic industry is materially injured or threatened with material injury, or that the establishment of an industry is materially retarded, by reason of the allegedly unfairly traded imports.[1] In applying this standard, the Commission weighs the evidence before it and determines whether "(1) the record as a whole contains clear and convincing evidence that there is no material injury or threat of such injury; and (2) no likelihood exists that contrary evidence will arise in a final investigation."[2]

II. Background

The petitions in these investigations were filed on April 24, 2025, by Ferroglobe USA, Inc. ("Ferroglobe") and Mississippi Silicon LLC ("MS Silicon") (collectively, "Petitioners"), domestic producers of silicon metal.[3] Petitioners appeared at the staff conference accompanied by counsel and submitted a postconference brief.[4]

Several respondent entities participated in the investigations. Simcoa Operations Pty, Ltd. ("Simcoa") and Shintech Inc. ("Shintech"), an Australian producer and exporter to the

[1] 19 U.S.C. §§ 1671b(a), 1673b(a) (2000); *see also American Lamb Co. v. United States*, 785 F.2d 994, 1001-04 (Fed. Cir. 1986); *Aristech Chem. Corp. v. United States, 2*0 CIT 353, 354-55 (1996). No party argues that the establishment of an industry in the United States is materially retarded by the allegedly unfairly traded imports.

[2] *American Lamb Co*., 785 F.2d at 1001; *see* also *Texas Crushed Stone Co. v. United States*, 35 F.3d 1535, 1543 (Fed. Cir. 1994).

[3] Petitions, EDIS Doc. 849529 (Apr. 24, 2025).

[4] Petitioners' Written Testimony, EDIS Doc. 851644 (May 14, 2025) ("Pet. Written Testimony"); Petitioners' Postconference Brief, EDIS Doc. 851644 (May 20, 2025) ("Pet. Postconference Br.") at 1.

United States and a U.S. importer of silicon metal from Australia, respectively, appeared at the staff conference accompanied by counsel and submitted a postconference brief.[5] Elkem ASA ("Elkem"), a Norwegian producer of silicon metal, submitted written witness testimony for the conference and a postconference brief.[6] Wacker Polysilicon North America LLC ("WPNA"), a U.S. importer of silicon metal from Norway and U.S. purchaser, and Wacker Chemicals Norway AS (collectively "Wacker"), a Norwegian producer of silicon metal, appeared at the staff conference accompanied by counsel and submitted a postconference brief.[7] In addition, the Royal Thai Government ("RTG") submitted a postconference brief,[8] and Lao Green Resources Silicon Factory Sole Co., Ltd., a non-party and U.S. importer of silicon metal produced in Laos, submitted a written statement.[9]

U.S. industry data are based on the questionnaire responses of two domestic producers, accounting for all known U.S. production of silicon metal in 2024.[10] U.S. import data are based on official Commerce import statistics (under HTS subheadings 2804.69.1000 and 2804.69.5000) and usable questionnaire responses from 11 U.S. importers, accounting for 80.6 percent of subject imports from the five countries in 2024 -- including *** percent of subject imports from Angola, *** percent of subject imports from Australia, *** percent of subject imports from Laos, *** percent of subject imports from Norway, and *** percent of subject imports from Thailand -- and *** percent of nonsubject imports that year.[11] The Commission received responses to its questionnaires from five foreign producers of subject merchandise:

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[5] Simcoa Operations Pty, Ltd. ("Simcoa") and Shintech Inc. ("Shintech") Written Testimony (May 14, 2025) ("Simcoa's Written Testimony"), EDIS Doc. 851275; Simcoa and Shintec's Postconference Brief, EDIS Doc. 851676 (May 20, 2025) ("Simcoa's Postconference Br.") at 1.

[6] Elkem ASA Written Testimony, EDIS Doc. 851273 (May 15, 2025) ("Elkem Written Testimony") Elkem's Postconference Brief, EDIS Doc. 851644 (May 20, 2025) ("Elkem Postconference Br.") at 1.

[7] Wacker Polysilicon North America LLC ("WPNA") and Wacker Chemicals Norway AS' Written Testimony, EDIS Doc. 851279 (May 14, 2025) ("Wacker's Written Testimony"); Wacker Polysilicon North America LLC ("WPNA") and Wacker Chemicals Norway AS' Postconference Brief, EDIS Doc. 851650 (May 20, 2025) ("Wacker's Postconference Br.") at 1.

[8] Royal Thai Government's Postconference Brief, EDIS Doc. 851631 (May 20, 2025) ("RTG's Postconference Br.") at 1.

[9] Lao Green Resources Silicon Factory Sole Co, Ltd.'s Non-Party Written Submission, EDIS Doc. 851011 (May 13, 2025) ("Lao Green's Written Submission") at 1.

[10] Confidential Staff Report, INV-XX-074 (June 2, 2025), as revised by INV-XX-086 (June 4, 2025) ("CR"); *Silicon Metal from Angola, Australia, Laos, Norway, and Thailand*, Inv. Nos. 760-TA-763 & 731-TA-1743-1746 (Preliminary), USITC Pub. 5639 (June 2025) ("PR") at 1.5, 3.1, and Table 3.1; *see also* Petition, Volume I at 2 ("Petition") (unless otherwise specified all citations to the Petitions refer to Volume I).

[11] CR/PR at 1.4, 4.1. Imports are based on unadjusted official Commerce import statistics. *Id.* at Table 4.2 note. Related information are based on U.S. importer questionnaire responses. *See id.* at 4.1.

one producer/exporter in Australia, estimated to have accounted for *** percent of production of subject merchandise in Australia in 2024; two producers/exporters in Norway, estimated to have accounted for *** percent of production of subject merchandise from Norway in 2024; and two producers/exporters in Thailand, estimated to have accounted for *** percent of production of subject merchandise from Thailand in 2024.[12] No responses were received from any producers/exporters in Angola or Laos.[13]

III. Domestic Like Product

In determining whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[14] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[15] In turn, 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."[16]

By statute, the Commission's "domestic like product" analysis begins with the "article subject to an investigation," *i.e.*, the subject merchandise as determined by Commerce.[17] Therefore, Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value is "necessarily the starting point of the Commission's like product analysis."[18] The Commission then defines the domestic like product

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[12] CR/PR at 7.4, Table 7.1. Exports to the United States from the one responding firm in Australia accounted for *** percent of U.S. imports of silicon metal from Australia in 2024; exports to the United States from the two responding firms in Norway accounted for *** percent of U.S. imports of silicon metal from Norway in 2024; and exports to the United States from the two responding firms in Thailand accounted for *** percent of U.S. imports of silicon metal from Thailand in 2024. CR/PR at 7.4, Table 7.1.

[13] CR/PR at Table 7.1

[14] 19 U.S.C. § 1677(4)(A).

[15] 19 U.S.C. § 1677(4)(A).

[16] 19 U.S.C. § 1677(10).

[17] 19 U.S.C. § 1677(10). The Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value. *See*, *e.g.*, *USEC, Inc. v. United States*, 34 Fed. App'x 725, 730 (Fed. Cir. 2002) ("The ITC may not modify the class or kind of imported merchandise examined by Commerce."); *Algoma Steel Corp. v. United States,* 688 F. Supp. 639, 644 (Ct. Int'l Trade 1988), *aff'd*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

[18] *Cleo Inc. v. United States*, 501 F.3d 1291, 1298 (Fed. Cir. 2007); *see also Hitachi Metals, Ltd. v.* (Continued…)

in light of the imported articles Commerce has identified.[19] The decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[20] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[21] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[22] It may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[23]

In its notices of initiation, Commerce defined the imported merchandise within the scope of these investigations as:

> The scope of this investigation covers all forms and sizes of silicon metal, including silicon metal powder. Silicon metal contains at least 85.00 percent but less than 99.99 percent silicon, and less than 4.00 percent iron, by actual weight.

United States, Case No. 19-1289, slip op. at 8-9 (Fed. Cir. Feb. 7, 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

[19] *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Hosiden Corp. v. Advanced Display Mfrs.,* 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Torrington Co. v. United States*, 747 F. Supp. 744, 748–52 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) (affirming the Commission's determination defining six like products in investigations where Commerce found five classes or kinds).

[20] *See, e.g., Cleo*, 501 F.3d at 1299; *NEC Corp. v. Dep't of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), aff'd, 938 F.2d 1278 (Fed. Cir. 1991) ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

[21] *See*, *e.g.*, S. Rep. No. 96-249 at 90-91 (1979).

[22] *See*, *e.g.*, *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49*; see also* S. Rep. No. 96-249 at 90-91 (Congress has indicated that the like product standard should not be interpreted in "such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not 'like' each other, nor should the definition of 'like product' be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.").

[23] *See*, *e.g.*, *Pure Magnesium from China and Israel*, Inv. Nos. 701-TA-403 and 731-TA-895-96 (Final), USITC Pub. 3467 (Nov. 2001) at 8 n.34; *Torrington,* 747 F. Supp. at 748-49 (holding that the Commission is not legally required to limit the domestic like product to the product advocated by the petitioner, co-extensive with the scope).

> Semiconductor grade silicon (merchandise containing at least 99.99 percent silicon by actual weight and classifiable under Harmonized Tariff Schedule of the United States (HTSUS) subheading 2804.61.0000) is excluded from the scope of this investigation.
>
> Silicon metal is currently classifiable under subheadings 2804.69.1000 and 2804.69.5000 of the HTSUS. While the HTSUS numbers are provided for convenience and customs purposes, the written description of the scope remains dispositive.[24] [25]

Silicon is a light chemical element with metallic and nonmetallic characteristics. It is a semiconductor, meaning it is a poor conductor of electricity at room temperature, but can be highly conductive when it is heated.[26] Silicon metal is primarily used by the aluminum and chemical industries. Silicon metal is a product normally composed almost entirely of elemental silicon, along with small amounts of other elements, such as iron, aluminum, and calcium. It is manufactured and sold in various degrees of purity. Silicon metal is often described in terms of "grades" which refer to ranges of specifications establishing the minimum amounts of silicon and the maximum amounts of other elements, such as boron, iron, calcium and aluminum that silicon metal may contain. Unlike grades for some other industrial products, different "grades" of silicon metal do not necessarily differ in terms of quality; rather, the ranges of specifications that determine "grades" vary depending on the type of end use of the silicon metal. There are five general end uses using five broadly defined categories of silicon metal, generally ranked in descending order of purity as: (1) semiconductor; (2) solar; (3) chemical (or silicones); (4) metallurgical used to produce primary aluminum; and (5) metallurgical used to produce

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[24] *Silicon Metal From Angola, Australia, the Lao People's Democratic Republic, and Norway: Initiation of Less-Than-Fair-Value Investigations*, 90 Fed. Reg. 21741, 21746 (May 21, 2025) ("*AD Initiation Notice*"); *Silicon Metal From Australia, the Lao People's Democratic Republic, Norway, and Thailand: Initiation of Countervailing Duty Investigations*, 90 Fed. Reg. 21746, 21750 (May 21, 2025) ("*CVD Initiation Notice*"). Commerce's scope is identical in both the AD and CVD investigations. *See id*.

[25] The scope in these investigations is the same as the scope in prior related investigations on silicon metal from various countries – including the 2018 investigations on silicon metal from Australia and Norway. *See, e.g., Silicon Metal from Australia, Brazil, Kazakhstan, and Norway,* Inv. Nos. 701-TA-567-569 and 731-TA-1343-1345 (Final), USITC Pub. 4773 (Apr. 2018) ("USITC Pub. 4773"); *Silicon Metal from Russia,* Inv. No. 731-TA-991 (Third Review), USITC Pub. 5058 at 19 (Aug. 2020) ("USITC Pub. 5058"); *Silicon Metal from Bosnia and Herzegovina, Iceland, Kazakhstan, and Malaysia,* Inv. Nos. 701-TA-652 and 731-TA-1524-1526 (Prelim.), USITC Pub. 5107 (Aug. 2020) ("USITC Pub. 5107"); and *Silicon Metal from Bosnia and Herzegovina, Iceland, Kazakhstan, and Malaysia,* Inv. Nos. 701-TA-652 and 731-TA-1524-1526 (Final), USITC Pub. 5180 at 19 (Apr. 2021) ("USITC Pub. 5180").

[26] CR/PR at 1.8.

secondary aluminum.[27] Whether domestic or imported, it is usually sold in lump form, typically ranging from 6 inches x ½ inch to 4 inches x ¼ inch, or in powder form.[28]

Silicon metal is used in the production of both primary aluminum (produced from ore) and secondary aluminum (produced from scrap).[29] Silicon metal is a necessary ingredient in aluminum casting alloys, where it improves fluidity, castability, strength, and weldability when added to aluminum.[30] Chemical manufacturers also consume silicon metal to produce silicones and polysilicon.[31]

A. Arguments of the Parties

Petitioners argue that the Commission should define a single domestic like product consisting of silicon metal coextensive with the scope of the investigations.[32] None of the Respondents objected to Petitioners' proposed definition for purposes of the preliminary phase investigations.[33]

B. Analysis

Based on the record, we define a single domestic like product consisting of all silicon metal, coextensive with the scope.

Physical Characteristics and Uses. All domestically produced silicon metal within the scope shares the same basic physical characteristics and end uses. While different specifications of silicon metal can possess minor differences in terms of its silicon content by weight or the presence or absence of minor elements, all domestically produced silicon metal products within the scope are composed almost entirely of elemental silicon in various degrees of purity.[34] Silicon metal is used as an alloying agent in the production of primary and secondary aluminum, to produce silicones (which are used for a variety of applications, including adhesives, resins, lubricants, plastomers, anti-foaming agents, and water repellent compounds), and to produce polysilicon, a high purity form of silicon metal primarily used in the manufacturing of semiconductors and solar cells.[35]

Manufacturing Facilities, Production Processes and Employees. In general, all domestically produced silicon metal within the scope, regardless of specification, is produced

[27] CR/PR at 1.10; *see also* Petition at 5.
[28] CR/PR at 1.8.
[29] CR/PR at 1.8.
[30] CR/PR at 1.8-1.9.
[31] CR/PR at 1.9.
[32] Petitioners' Postconference Br. at 7-8; Petition at 16-19.
[33] CR/PR at 1.14.
[34] Petition at 17, *citing* USITC Pub. 5107 at 7.
[35] CR/PR at 1.8 to 1.11; Petition at 17, *citing* USITC Pub. 5107 at 7-8.

using essentially the same production process and employees, in the same manufacturing facilities.[36] Silicon metal is produced in submerged-arc electric furnaces, using a highly energy-intensive smelting process. Silicon metal producers typically manufacture different grades of silicon metal using the same inputs, facilities, furnaces, and employees. As long as the raw materials are of sufficient quality, all specifications or grades of silicon metal can be produced on the same equipment with the same input materials.[37]

Channels of Distribution. A substantial majority of U.S. commercial shipments by domestic producers went to *** during the January 2022-December 2024 period of investigation ("POI").[38] A substantial portion of their remaining U.S. shipments went to ***.[39] Smaller percentages went to ***.[40]

Interchangeability. According to Petitioners, silicon metal produced to the same specifications (or of the same "grade") is entirely interchangeable, and silicon metal of a higher grade can be, and frequently is, used for lower grade applications.[41] On the other hand, Respondents argue that silicon metal of different grades is not interchangeable and that, for example, aluminum grade silicon metal is not interchangeable with chemical grade silicon

[36] Conference Transcript, EDIS Doc. 851915 ("Conference Tr.") at 41-42 (Lage), 42 (Gordon).

[37] CR/PR at 1.11 to 1.13; Petition at 17, *citing* USITC Pub. 5107 at 8.

[38] CR/PR at Table 2.4; *see also* Petition at 17, *citing* USITC Pub. 5107 at 8. The percentage of U.S. commercial shipments by domestic producers going to chemical producers ranged between *** percent and *** percent during the three calendar years of the POI. CR/PR at Table 2.4.

[39] CR/PR at Table 2.4. The percentage of U.S. commercial shipments by domestic producers going to secondary aluminum producers ranged between *** percent and *** percent during the three calendar years of the POI. *Id.*

[40] CR/PR at Table 2.4. The percentage of U.S. commercial shipments by domestic producers going to primary aluminum producers ranged between *** percent and *** percent during the three calendar years of the POI (2022-2024). *Id*. The percentage of U.S. commercial shipments by domestic producers going to other end users ranged between *** percent and *** percent during the POI. *Id*. The percentage of U.S. commercial shipments by domestic producers going to distributors ranged between *** percent and *** percent during the POI. *Id*.

[41] Pet. Postconference Br. at 15 (silicon metal is a fungible commodity product, as silicon metal meeting a particular specification is generally fungible regardless of source), at 16 ("*** producer or importer reported that silicon metal from any source was "never" interchangeable); Petition at 18; Conference Tr. at 21 (Chaal); Pet. Written Conference Testimony. Exh. 2 (testimony of Mohammed Chaal, EDIS Doc. 85120 (May 14, 2025) at 3; *see also* Pet. Postconference Br. at 7-8. Petitioners state that it is a "misnomer" to speak of "grades" of silicon metal, since the issue is one of different specifications rather than different "grades." Written Conference Testimony of Mohammed Chaal at 3.

metal. They also dispute that higher grade silicon metal is used in lower grade applications, contending that this would be commercially impracticable.[42]

Producer and Customer Perceptions. Petitioners assert that both producers and customers consider silicon metal within the scope to be a single product category.[43]

Price. The pricing data on the record of the preliminary phase of the investigations indicates that different grades of silicon metal were sold within similar price ranges during the POI.[44]

Conclusion. The record indicates that all types of domestically produced silicon metal within the scope share the same basic physical characteristics and general uses, are sold through the same channels of distribution, and are produced in the same production facilities using the same production processes and employees. Petitioners maintain that producers and customers view all silicon metal products as belonging to the same family of products, and the pricing data indicate that different types of domestically produced silicon metal were sold within similar price ranges during the POI. On the other hand, Petitioners and Respondents disagree as to the interchangeability of different types of silicon metal in the same end uses. In light of the preponderance of similarities between the silicon metal products used in different end use applications, and in the absence of any contrary argument, we define a single domestic like product consisting of all silicon metal, coextensive with Commerce's scope.

IV. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[45] 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.

There are no related parties or other domestic industry issues in the preliminary phase of these investigations.[46] Accordingly, consistent with our definition of the domestic like product, we define the domestic industry to include all U.S. producers of silicon metal.

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[42] Elkem's Postconference Br. at 14 (not all silicon metal is substitutable), Response to Staff's Questions, Exh. 1 at 8-9 (limited interchangeability and substitutability); Wacker's Postconference Br. at 3, 9-13; Simcoa's Postconference Br. at 12-18.

[43] Pet. Postconference Br. at 8; Petition at 18; Conference Tr. at 42-43 (Lage), 43 (Bay).

[44] CR/PR at Table 5.7.

[45] 19 U.S.C. § 1677(4)(A).

[46] No domestic producer imported or purchased subject merchandise during the POI, or is affiliated with any U.S. importer or subject exporter of subject merchandise. CR/PR at Table 3.2.

V. Negligible Imports

Section 771(24) of the Tariff Act, which defines "negligibility," provides that imports from a subject country that are less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or self-initiation, as the case may be, shall be deemed negligible.[47] The statute further provides that subject imports from a single country which comprise less than 3 percent of total such imports of the product may not be considered negligible if there are several countries subject to investigation with negligible imports and the sum of such imports from all those countries collectively accounts for more than 7 percent of the volume of all such merchandise imported into the United States.[48] In the case of countervailing duty investigations involving developing countries (as designated by the United States Trade Representative), the statute indicates that the negligibility thresholds are 4 percent and 9 percent, rather than 3 percent and 7 percent.[49]

Additionally, even if subject imports are found to be negligible for purposes of present material injury, they shall not be treated as negligible for purposes of a threat analysis should the Commission determine that there is a potential that subject imports from the country concerned will imminently account for more than 3 percent (4 percent for developing countries in CVD investigations) of all such merchandise imported into the United States.[50] The Commission also assesses whether there is a potential that the aggregate volumes of subject imports from all countries with currently negligible imports will imminently exceed 7 percent of all such merchandise imported in the United States.[51] To assess the potential for imports to imminently surpass the negligibility for purposes of a threat analysis, the Commission typically has examined the share of total imports, especially toward the latter period of the POI, production capacity, capacity utilization, and inventories.[52]

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[47] 19 U.S.C. § 1677(24)(A)(i).

[48] 19 U.S.C. § 1677(24)(A)(ii).

[49] 19 U.S.C. § 1677(24)(B).

[50] 19 U.S.C. § 1677(24)(A)(iv).

[51] 19 U.S.C. § 1677(24)(A)(iv).

[52] *See Certain Steel Concrete Reinforcing Bars from Belarus, China, Korea, Latvia, and Moldova*, Inv. Nos. 731-873-874 and 877-879 (Final), USITC Pub. 3440 (July 2001); *Certain Stainless Steel Butt-Weld Pipe Fittings from Germany*, Inv. No. 731-TA-864 (Final), USITC Pub. 3372 (Nov. 2000); *Certain Cold-Rolled Steel Products from Argentina, Brazil, China, Indonesia, Japan, Russia, Slovakia, South Africa, Taiwan, Thailand, Turkey, and Venezuela*, Inv. Nos. 701-TA-33-396 and 731-TA-829-840 (Prelim), USITC Pub. 3214 (July 1999).

A. Arguments of the Parties

Petitioners' Arguments. Petitioners argue that official import statistics show that subject imports from Australia, Laos, and Norway are not negligible for purposes of present material injury.[53] They also argue that there is a potential for subject imports from both Angola and Thailand to imminently exceed the negligibility threshold for purposes of threat.[54]

With respect to Angola, Petitioners contend that the potential for subject imports from Angola to exceed the three percent threshold is clear from data showing that they exceeded the threshold in two of the last three quarters, and in six of the last nine months, of the POI.[55] As further support, they argue that the Angolan silicon metal industry is adding large amounts of capacity[56] and is aggressively targeting all sectors and customers in the U.S. market,[57] and that U.S. importers' reported significant quantities of arranged imports from Angola for delivery in the near future.[58]

With respect to Thailand, Petitioners note that Thailand has historically represented a high proportion of total imports,[59] including 4.9 percent of total imports in 2022.[60] In Petitioners' view, this demonstrates that Thai producers have the ability, experience, and customer base to quickly ship large volumes of subject merchandise to the U.S. market.[61] Further, Petitioners claim that high energy prices in Thailand explain the reduced presence of subject imports from Thailand in the U.S. market during the POI. They, however, allege that the Thai government is taking actions to artificially reduce energy prices to bolster its industrial

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[53] Conference Tr. at 6 (Bay); Petition at 21-24, Exh. I-13. *See also* CR/PR at Table 4.7.

[54] Pet. Postconference Br. at 3, 9-14; *see also* Conference Tr. at 6 (Bay); Petition at 21-24, Exh. I-13. Petitioners also note that there were no representatives on behalf of the silicon metal producers in Angola at the staff conference – and no producer of subject merchandise in Angola provided a questionnaire response. *Id*. at 3. Accordingly, Petitioners state that there is limited information on the record pertaining to imports and the potential for future imports from Angola. *See id*.

[55] Pet. Postconference Br. at 10, *citing* Petitioners' Witness Testimony & Slide Presentation, at Exh. 5, Slide 9, EDIS Doc. 851210 (May 14, 2025); Conference Tr. at 31 (Pope).

[56] Pet. Postconference Br. at 10, *citing* Petition at 41-42. For example, in ***, Zhongan Hengtai ("ZHAT"), an Angolan facility ***. Pet. Postconference Br. at 10 n.30.

[57] Pet. Postconference Br. at 10. Petitioners assert that the Angolan product is being marketed to both aluminum and chemical customers. Conference Tr. at 27 (Cook) and 145 (Majumdar).

[58] Pet. Postconference Br. at 10 & n.32. For example, the questionnaire response of ***. *Id*. at 10 n.32, *citing* *** U.S. Importers' Questionnaire, EDIS Doc. 851218 at 8. Further, importer ***. Pet. Postconference Br. at 10 n.32, *citing* *** U.S. Importers' Questionnaire Response, EDIS Doc. 850682 at 8.

[59] Pet. Postconference Br. at 11.

[60] Pet. Postconference Br. at 11, Exh. 2 (market share analysis).

[61] Pet. Postconference Br. at 11. For example, Petitioners note that this includes prior relationships with customers requiring higher purity silicon metal, such as Respondent Wacker. *Id*., *citing* Conference Tr. at 144 (Majumdar).

base and attract investments in data centers.[62] Given the likelihood that declining electricity costs will permit Thai producers to *** production and shipments, Petitioners assert that the Thai producers are likely to direct as much of their silicon metal production to the United States as possible, creating the potential for such imports to imminently exceed the negligibility threshold.[63]

Respondents' Arguments. The RTG argues that subject imports from Thailand are unlikely to imminently exceed the three percent negligibility threshold.[64] It contends that *** of the *** U.S. importers that imported subject merchandise from Thailand from April 2024 to March 2025 reported *** arranged imports of silicon metal for ***.[65] RTG also criticizes the Petitioners' reliance on subject imports from Thailand in 2022 as the basis for its contentions, arguing that conditions for the Thai industry have changed dramatically since that time.[66]

While agreeing with the Petitioners that the level of subject imports from Thailand is highly sensitive to changes in energy prices in Thailand, the RTG argues that the high energy prices make it highly unlikely that subject imports from Thailand will imminently exceed the three percent threshold.[67] Noting that Thailand generates most of its energy with liquified natural gas ("LNG"),[68] the RTG contends that the market price for LNG increased substantially following the Russian invasion of Ukraine.[69] Given this, the RTG asserts that the volume of subject imports from Thailand in 2022, when LNG prices were much lower, is not indicative of what the volume is likely to be in the imminent future.[70] In its view, the price of LNG is likely to remain elevated, due to the Russian invasion of Ukraine and other factors, and will likely continue to limit subject imports from Thailand to negligible levels.[71]

[62] Pet. Postconference Br. at 3.

[63] Pet. Postconference Br. at 14.

[64] Royal Thai Government Postconference Brief, EDIS Doc. No. 851631 at 7-10 (May 20, 2025) ("RTG Postconference Br."). No other Respondents addressed negligibility for threat.

[65] RTG Postconference Br. at 7, *citing* U.S. Importer Questionnaire Response of *** EDIS Doc. No. 850860, pg. 9 at Question II-3a; U.S. Importer Questionnaire Response of *** EDIS Doc. No. 850719, pg. 8 at Question II-3a; U.S. Importer Questionnaire Response of *** EDIS Doc. No. 851400, pg. 8 at Question II-3a.

[66] RTG Postconference Br. at 7.

[67] RTG Postconference Br. at 7.

[68] RTG Postconference Br. at 7, *citing* Conference Tr. at 144-145 (Majumdar).

[69] RTG Postconference Br. at 9, *citing* Conference Tr. at 144-145 (Majumdar).

[70] RTG Postconference Br. at 9.

[71] RTG Postconference Br. at 10.

Finally, the RTG asserts that subject imports from Thailand and Angola combined are unlikely to imminently exceed the seven percent negligibility threshold.[72]

B. Analysis

We first consider what data to use for calculating import shares for purpose of our negligibility analysis. We rely on official import statistics for determining the volume of subject imports from each subject country and the total volume of imports, as Petitioners propose and to which Respondents raise no objection.[73] The relevant HTS statistical reporting numbers are coextensive with the scope and include no out-of-scope products.[74] By contrast, the share of subject imports covered by importers questionnaire responses, based on official import statistics, was *** percent for Angola, *** percent for Australia, *** percent for Laos, *** percent for Norway, and *** percent for Thailand.[75] Given the less than complete coverage afforded by importer questionnaire responses, and the *** coverage with respect to subject imports from Angola, the best information available on the record for purposes of our negligibility calculations consists of official U.S. import statistics under the primary HTS numbers.[76]

Subject imports from Australia, Laos, and Norway are above the statutory negligibility threshold. Based on official import statistics, during the 12-month period preceding the filing of the petitions (April 2024-March 2025), subject imports from Australia accounted for 8.3 percent of total imports, subject imports from Laos accounted for 4.9 percent of total imports, and subject imports from Norway accounted for 10.4 percent of total imports.[77] Because subject imports from Australia, Laos, and Norway are above the 3 percent negligibility threshold, we find that imports from these three countries subject to the antidumping and countervailing duty investigations are not negligible.

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[72] RTG Postconference Br. at 10. RTG asserts that by either measure – the general import statistics or the U.S. importers questionnaire responses, imports from Angola and Thailand fall far below the seven percent threshold. *Id*. at 5.

[73] *See, e.g.*, Pet. Postconference Br. at 2, Exh. 2; Simcoa's Postconference Br. at 1-3; Elkem's Postconference Br. at 1-3. The staff report sets forth U.S. imports from the five subject countries based on 2024 HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000. CR/PR at 4.13 & Table 4.6.

[74] *See* CR/PR at 1.4 n.8, 4.5, 4.12, Tables 4.2 & 4.6. Petitioner's counsel indicated that the primary HTS codes specific to silicon metal (2804.69.1000 and 2804.69.5000) do not contain any out-of-scope merchandise. *See* Pet. Postconference Br. at 2. Nor do the Respondents contest that census data are likely to be the best available evidence for calculating the denominator of total. *See*, *e.g.*, Simcoa's Postconference Br. at 1-3; Elkem's Postconference Br. at 1-3.

[75] CR/PR at 4.1.

[76] CR/PR at Table 4.6.

[77] CR/PR at Table 4.6. The volume of imports from each of these countries subject to the antidumping and countervailing duty investigations is the same. *Id.*

Subject imports from Angola and Thailand, however, accounted for 1.9 percent and 1.2 percent, respectively.[78] The Commission has consistently found that it may not aggregate individually negligible subject imports in countervailing duty investigations with subject imports that are individually negligible in antidumping duty investigations.[79] Because imports from Angola subject to the antidumping duty investigation and imports from Thailand subject to the countervailing duty investigation are below the 3 percent negligibility threshold individually, we find that such imports are negligible for purposes of the Commission's analysis of present material injury.

We next examine whether imports from Angola subject to the antidumping duty investigation and imports from Thailand subject to the countervailing duty investigation are negligible for purposes of a threat analysis.

Angola. First, we consider whether imports from Angola subject to the antidumping duty investigation have the potential to imminently exceed the three percent negligibility threshold for purposes of determining threat of material injury. After entering the U.S. market for the first time in June 2024, subject imports from Angola rapidly increased their share of total imports during the rolling 12-month periods through March 2025, from 0.1 percent in June 2024 to 0.2-1.2 percent during the July-December period, 1.4 percent in January 2025, 1.8 percent in February 2025, and 1.9 percent in March 2025.[80] Data concerning arranged imports indicate that this increasing trend is likely to continue, with the volume of arranged subject imports from Angola for 2025 accounting for *** percent of total arranged imports that year.[81]

There is limited information on the record concerning the subject industry in Angola because no Angolan producer responded to the Commission's questionnaire. According to a

[78] CR Table 4.6. Subject import volume is the same with respect to imports of silicon metal from each source subject to antidumping and countervailing duty investigations.

[79] *See, e.g., Large Diameter Welded Pipe from Canada, Greece, Korea, and Turkey*, Inv. Nos. 701-TA-595-596 and 731-TA-1401, 1403, 1405-1406 (Final), USITC Pub. 4883 (April 2019) at 10 n.25 (April 2019); *Cold-Rolled Steel Flat Products from Brazil, India, Korea, Russia, and the United Kingdom*, Inv. Nos. 701-TA-540, 542-544 and 731-TA-1283, 1285, 1287, and 1289-1290 (Final), USITC Pub. 4637 at 13 n.69 (Sept. 2016); *Certain Carbon and Alloy Steel Cut-to-Length Plate from Austria, Belgium, Brazil, China, France, Germany, Italy, Japan, Korea, South Africa, Taiwan, and Turkey*, Inv. Nos. 701-TA-559-561 and 731-TA-1317-1328 (Preliminary), USITC Pub. 4615 at 22-23 (May 2016). *See also, Nucor Corp. v. United States,* 296 F.Supp.3d 1276 (Ct. Int'l Trade 2018) (affirming Commission's separate treatment of dumped and subsidized imports for negligibility).

[80] CR/PR at Table 4.7.

[81] CR/PR at Table 7.16. Arranged imports from Angola accounted for *** percent of total arranged imports from January to December 2025. *Id*. They were *** percent, *** percent, *** percent, and *** percent of total arranged imports for the first, second, third and fourth quarters of 2025, respectively. *Id*.

trade press article submitted by Petitioner, Zhongan Hengtai, a subject Angolan producer ***.[82] Thus, the information available indicates that the subject industry in Angola has the ability to further increase its exports to the U.S. market in the imminent future.

The record in the preliminary phase of these investigations does not provide clear and convincing evidence that there is not a potential for subject imports from Angola to imminently exceed the negligibility threshold, as required by the *American Lamb* standard.[83] In light of the recent entry of subject imports from Angola into the U.S. market in June 2024, their rapid increase as a share of total imports during the rolling 12-month periods through March 2025, their even higher share of total arranged imports reported for 2025, and the information available indicating that the Angolan industry recently increased its capacity, we find that imports from Angola subject to the antidumping duty investigation have the potential to exceed the 3 percent negligibility threshold in the imminent future, and are therefore not negligible for threat purposes.

Thailand. We next consider whether imports from Thailand subject to the countervailing duty investigation have the potential to imminently exceed the 3 percent negligibility threshold for purposes of determining threat of material injury. In considering whether such subject imports have the potential imminently to exceed the negligibility threshold, the Commission has considered whether such imports have exceeded the statutory threshold for a sustained period prior to the filing of the petition.[84] We observe that based on official import statistics, subject imports from Thailand accounted for over 3 percent of total imports during the eight rolling 12-month periods from January 2023 through August 2023, declining irregularly from 4.8 percent of total imports in the 12-month period ending in January 2023 to 3.2 percent of total imports in the 12-month period ending in August 2023.[85] Subject imports from Thailand then declined below 3 percent of total imports in the 12-month period ending in September 2023 and remained under 3 percent of total imports through the 12-month period ending March 2025.[86] After increasing from 2.0 percent of total imports in the 12-month period ending in December 2023 to 2.8 percent of total imports in the 12-month

[82] *See* Petition at 22-23, Exh. I-14 (***).

[83] *American Lamb Co.*, 785 F.2d at 1001; *Co-Steel Raritan, Inc. v. United States*, 357 F.3d 1294 (Fed. Cir. 2004).

[84] *See, e.g., Cold-Rolled Steel*, USITC Pub. 4637 at 9 (subject imports from India exceeded statutory negligibility threshold for final six months of 12-month negligibility period).

[85] CR/PR at Table 4.7.

[86] CR/PR at Table 4.7.

period ending in March 2024, subject imports from Thailand declined irregularly as a share of total imports to 1.2 percent in the 12-month period ending in March 2025.[87]

The record indicates that the volume of subject imports from Thailand declined during the POI as electricity prices in Thailand increased. Because the production of silicon metal is energy-intensive, the cost of electricity is an important cost in the production of silicon metal.[88] At the conference, officials from Mississippi Silicon and Wacker attributed the decline in subject imports from Thailand to the high electricity costs in Thailand.[89] The RGT claims that electricity prices in Thailand increased after Russia's invasion of Ukraine in February 2022 and increased prices for the LNG used to generate electricity in Thailand, and Thai producer GS Energy reported that ***.[90]

Responding Thai producers had increasing amounts of excess capacity as their capacity increased, but their production declined during the POI. Thai producers' capacity increased *** percent while their production declined *** percent from 2022 to 2024, resulting in a decline in their capacity utilization from *** percent in 2022 to *** percent in 2024.[91] In 2024, Thai producers possessed excess capacity of *** short tons, and they project that their capacity will remain above 2022 levels in 2025 and 2026, at *** short tons.[92] Thai producers' inventories declined from *** short tons in 2022, equivalent to *** percent of total shipments, to *** short tons in 2024, equivalent to *** percent of total shipments.[93]

The record also indicates that the export orientation of Thai producers declined during the POI but remained appreciable. Responding Thai producers' exports as a share of total shipments declined irregularly from *** percent in 2022 to *** percent in 2024, while their exports to the United States as a share of total shipments declined irregularly from *** percent in 2022 to *** percent in 2024.[94] Thai producers project that their exports as a share of total shipments will be *** percent in 2025 and *** percent in 2026, and that their exports to the United States as a share of total shipments will be *** percent in 2025 and *** percent in 2026.[95] On the other hand, GTA data covering exports of silicon metal under HTS subheading 2804.69 indicate that Thai exports of such merchandise increased from 6,766 short tons in 2022

[87] CR/PR at Table 4.7.
[88] CR/PR at 1.12 (Electricity accounts for 21 percent of the cost of producing silicon metal), 4.36.
[89] Conf. Tr. at 84 (Lage), 144-45 (Majundar).
[90] RGT's Postconference Br. at 9-10.
[91] CR/PR at Table 7.10.
[92] *Calculated from* CR/PR at 7.10.
[93] CR/PR at Table 7.12.
[94] CR/PR at Tables 7.10, 7.11.
[95] CR/PR at Table 7.11.

to 37,762 short tons in 2024, while Thai exports of silicon metal to the United States increased from 4,656 short tons in 2022 to 10,953 short tons in 2024.[96]

Several factors suggest that there may not be a potential for subject imports from Thailand to imminently exceed the 3 percent negligibility threshold. First, as discussed above, subject imports from Thailand accounted for only 1.2 percent of total imports during the April 2024 through March 2025 period - less than half of the 3 percent negligibility threshold.[97] Second, official import statistics show that the monthly volume of subject imports from Thailand has declined irregularly throughout the POI while the monthly volume of total imports has increased irregularly.[98] Third, these same monthly data show that subject imports from Thailand were last above the three percent threshold in August 2023. [99] In addition, responding importers reported no arranged imports from Thailand.[100] Therefore, there are no pending deliveries that would be indicative of significantly increased exports to the U.S. market in the imminent future.

Nevertheless, in order for subject imports from Thailand to have reached the 3 percent negligibility threshold in the rolling 12-month period ending in March 2025, such imports would need to have increased from 2,191 shorts tons to 5,530 short tons – an increase of only 3,339 short tons.[101] Subject imports from Thailand exceeded this level of monthly volume in every month of the January-March 2023 period, and approached 3 percent of total imports during the 12-month period ending in March 2024. Given the substantial excess capacity possessed by Thai producers and their export orientation, the record indicates that they would have the ability to increase their exports to the United States to a non-negligible level in the imminent future. While parties agree that the decline in subject imports from Thailand is attributable to electricity prices, they disagree as to the likelihood of a decline in electricity prices that would incentivize Thai imports to increase beyond the negligibility threshold. Petitioners submitted an article from Bloomberg reporting that the Thai government aims to reduce electricity prices

[96] CR/PR at Table 7.14. We note that GTA data, which are sourced from various national statistical authorities in the foreign countries, may not align with official U.S. import statistics for several reasons, including, but not limited to, the following: (1) product reported at the time of export may not yet be collected as reported imports to due to freight time and other reporting lags; (2) product reported as exported under the 2804.69 code in various countries, including Thailand, may have also been classified under a different code by U.S. importers when reported with CBP; and (3) differences in reporting reliability of import and export data sources.

[97] CR/PR at Table 4.6.

[98] CR/PR at Table 4.7

[99] CR/PR at Table 7.16.

[100] CR/PR at Table 7.16 (Thailand was the only one of the five subject imports that had no arranged imports); *see also* RTG Postconference Br. at 9.

[101] *Derived from* CR/PR at Table 4.6.

by 25 percent, from $0.11 per unit to $0.08 per unit, by next year, as a means of attracting data centers.[102] The RTG, on the other hand, argues that the price of LNG, and thus the price of electricity generated from LNG, is likely to remain elevated, due to the Russia/Ukraine war and other factors, and will likely continue to limit subject imports from Thailand to negligible levels.[103]

Based on the foregoing, including information at odds with the Thai producers' assertion that high electricity prices are likely to keep subject imports from Thai below the negligibility threshold in the imminent future, and evidence showing that subject imports from Thailand exceeded the negligibility threshold in the rolling 12-month periods earlier in the POI and approached the negligibility threshold in the rolling 12-month period ending in March 2024, and that the Thai industry possesses substantial excess capacity and is export-oriented, we cannot conclude that, under *American Lamb*, the record as a whole contains clear and convincing evidence that there is not a potential for subject imports from Thailand to imminently exceed the negligibility threshold and that no likelihood exists that contrary evidence will arise in a final investigation. We therefore find that imports from Thailand subject to the countervailing duty investigation have the potential to exceed the 3 percent negligibility threshold in the imminent future and are therefore not negligible for threat purposes.

VI. Cumulation

For purposes of evaluating the volume and effects for a determination of reasonable indication of material injury by reason of subject imports, section 771(7)(G)(i) of the Tariff Act requires the Commission to cumulate subject imports from all countries as to which petitions were filed and/or investigations self-initiated by Commerce on the same day, if such imports compete with each other and with the domestic like product in the U.S. market. In assessing whether subject imports compete with each other and with the domestic like product, the Commission generally has considered four factors:

(1) the degree of fungibility between subject imports from different countries and between subject imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;

[102] Pet. Postconference Br. at 9 & n. 42, Exhibit 23.

[103] RTG Postconference Br. at 10. In any final phase of these investigations, the Commission will seek additional information on electricity prices in Thailand and their impacts on silicon metal production in the country, as well as information on the Government of Thailand's attempt to reduce electricity prices in the country.

(2) the presence of sales or offers to sell in the same geographic markets of subject imports from different countries and the domestic like product;

(3) the existence of common or similar channels of distribution for subject imports from different countries and the domestic like product; and

(4) whether the subject imports are simultaneously present in the market.[104]

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.[105] Only a "reasonable overlap" of competition is required.[106]

A. Arguments of the Parties

Petitioners' Argument. Petitioners argue that the Commission should cumulate imports from Australia, Laos, and Norway for its analysis of reasonable indication of present material injury, contending that imports from these three subject sources compete with each other and the domestic like product in the U.S. market.[107] Petitioners assert that the petitions for the three subject countries were filed on the same day, that none of the statutory exceptions to cumulation apply, and that there is a reasonable overlap in competition between and among subject imports from Australia, Laos, and Norway and the domestic like product.[108]

[104] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986), *aff'd*, *Fundicao Tupy, S.A. v. United States*, 678 F. Supp. 898 (Ct. Int'l Trade), *aff'd*, 859 F.2d 915 (Fed. Cir. 1988).

[105] *See*, *e.g.*, *Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[106] The Statement of Administrative Action (SAA) to the Uruguay Round Agreements Act (URAA), expressly states that "the new section will not affect current Commission practice under which the statutory requirement is satisfied if there is a reasonable overlap of competition." H.R. Rep. No. 103-316, Vol. I at 848 (1994) (*citing Fundicao Tupy*, 678 F. Supp. at 902); *see Goss Graphic Sys., Inc. v. United States*, 33 F. Supp. 2d 1082, 1087 (Ct. Int'l Trade 1998) ("cumulation does not require two products to be highly fungible"); *Wieland Werke, AG*, 718 F. Supp. at 52 ("Completely overlapping markets are not required.").

[107] Pet. Postconference Br. at 14; *see also id*. at 15-18. As noted, Petitioners acknowledge that subject imports from Angola and Thailand are below the three percent negligibility threshold and therefore should not be cumulated for purposes of present material injury. *See id*. at 8-9.

[108] Pet. Postconference Br. at 14-18.

Respondents' Argument. For purposes of the preliminary phase of these investigations, Respondents have not raised any cumulation arguments.[109]

B. Analysis

We consider subject imports from Australia, Laos, and Norway on a cumulated basis, because the statutory criteria for cumulation are satisfied and the record shows a reasonable overlap in competition. As an initial matter, Petitioners filed the antidumping and countervailing duty petitions with respect to all three countries on the same day, April 24, 2025.[110] Imports from Angola subject to the antidumping duty investigation and imports from Thailand subject to the countervailing duty investigation may not be cumulated for purposes of present material injury and may only be cumulated for threat of material injury.

Fungibility. *** U.S. producers reported that the domestic like product and subject imports from Australia, Laos, and Norway are *** interchangeable, and that subject imports from all three sources are *** interchangeable with each other.[111] A majority of responding importers reported that the domestic like product is always or frequently interchangeable with subject imports from Australia, Laos, and Norway, and that subject imports from all three sources are always or frequently interchangeable with each other.[112]

The Commission's pricing data reflect that there were overlapping sales of the domestic like product and subject imports from Australia, Laos, and Norway reported for pricing product 2 (sales to secondary aluminum producers) during the POI, particularly from the first quarter of 2024 through the fourth quarter of 2024, indicating that the domestic like product and subject imports from all three sources were competing head-to-head for sales in the U.S. market.[113]

The record also shows substantial overlap between the domestic like product and subject imports from Australia, Laos, and Norway in terms of grade. A majority of U.S. shipments of the domestic like product and subject imports from Australia and Norway, and a

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[109] Respondent Elkem does not challenge cumulation of subject imports from Norway, Australia, and Laos for present material injury purposes, but reserves the right to challenge cumulation based on the record of any final phase investigation. *See* Elkem Postconf. Br. at 1.

[110] CR/PR Table 1.1.

[111] CR/PR at Table 2.11; *see also* Pet. Postconference Br. at 15-16; Petition at 15 (there is a high degree of substitutability between U.S.-origin and imported silicon metal, with relative price an important factors in purchasing decisions; and published price indices for silicon metal are referenced by purchasers in all sectors), 25 (silicon metal is a fungible product; imports from all sources and the domestic product compete on the basis of price).

[112] CR/PR at Table 2.11; *see also* Pet. Postconference Br. at 16, *citing* Responses to the U.S. Producers' Questionnaire at Question IV-20; Responses to the U.S. Importers' Questionnaire at Question III-20.

[113] CR/PR at Table 5.5.

smaller percentage of U.S. shipments of subject imports from Laos, were of metallurgical grade silicon metal.[114] A majority of U.S. shipments of subject imports from Laos, and smaller percentages of U.S. shipments of the domestic like product and subject imports of Australia and Norway, were of high purity grade.[115]

Channels of Distribution. A substantial majority of U.S. commercial shipments of the domestic like product were sold to *** during the POI,[116] with the balance sold to *** throughout the POI.[117] A majority of U.S. commercial shipments of subject imports from Australia were sold to ***, and most of the remainder were sold to ***, during the POI.[118] A majority of U.S. commercial shipments of subject imports from Laos were sold to ***, and the remainder were sold to ***, during the POI.[119] A majority of U.S. commercial shipments of subject imports from Norway were sold to ***, and most of the remainder were sold to ***, during the POI.[120] Thus, there was overlap between the domestic like product and subject

[114] CR/PR at Table 4.8. In 2024, *** percent of U.S. shipments of the domestic like product were of metallurgical grade silicon metal, while *** percent of U.S. shipments of subject imports from Australia were of metallurgical grade, *** percent of U.S. shipments of subject imports from Laos were of metallurgical grade, and *** percent of U.S. shipments of subject imports from Norway were of metallurgical grade. CR/PR at Table 4.8.

[115] CR/PR at Table 4.8. In 2024, *** percent of U.S. shipments of the domestic like product were of high purity grade silicon metal, while *** percent of U.S. shipments of subject imports from Australia were of high purity grade, while *** percent of U.S. shipments of subject imports from Laos were of high purity grade, and while *** percent of U.S. shipments of subject imports from Norway were of high purity metallurgical grade. CR/PR at Table 4.8.

[116] CR/PR at Table 2.4. The percentage of U.S. commercial shipments of the domestic like product going to polysilicon and chemical producers ranged between *** percent and *** percent during the three calendar years of the POI. *Id*.

[117] CR/PR at Table 2.4. The percentage of U.S. commercial shipments of the domestic like product going to secondary aluminum producers ranged between *** percent and *** percent during the three calendar years of the POI. *Id*.

[118] CR/PR at Table 2.4. The percentage of U.S. commercial shipments of subject imports from Australia going to secondary aluminum producers ranged between *** percent and *** percent during the three calendar years of the POI. *Id*. The percentage of U.S. commercial shipments of subject imports from Australia going to chemical producers ranged between *** percent and *** percent during the three calendar years of the POI. *Id*.

[119] CR/PR at Table 2.4. The percentage of U.S. commercial shipments of subject imports from Laos going to distributors ranged between *** percent and *** percent during the three calendar years of the POI. *Id*. The percentage of U.S. commercial shipments of subject imports from Laos going to secondary aluminum producers ranged between *** percent and *** percent during the three calendar years of the POI. *Id*.

[120] CR/PR at Table 2.4. The percentage of U.S. commercial shipments of subject imports from Norway going to "other end users" ranged between *** percent and *** percent during the three calendar years of the POI. *Id*. The percentage of U.S. commercial shipments of subject imports from (Continued…)

imports from Australia, Laos, and Norway with respect to sales to secondary aluminum producers, and also between the domestic like product and subject imports from Australia with respect to sales to chemical producers.

Geographic Overlap. U.S. producers and importers of subject merchandise from Australia, Laos, and Norway reported selling to all regions of the United States during the POI.[121]

Simultaneous Presence in Market. The domestic like product was present in the U.S. market throughout the POI.[122] During the 36-month POI, subject imports from Australia were present in the U.S. market for 32 months, subject imports from Laos were present in 25 months, and subject imports from Norway were present in all 36 months.[123]

Conclusion. The record in the preliminary phase of these investigations indicates that subject imports from Australia, Laos, and Norway are generally fungible with the domestic like product and each other. The record also indicates that imports from each of the subject countries and the domestic like product were generally sold in overlapping channels of distribution and geographic markets and were simultaneously present in the U.S. market during the POI. Because there appears to be a reasonable overlap of competition between and among imports from Australia, Laos, and Norway, and the domestic like product, we cumulate subject imports from these three countries for purposes of our analysis of whether there is a reasonable indication of material injury by reason of subject imports.

VII. Reasonable Indication of Material Injury by Reason of Subject Imports from Australia, Laos, and Norway

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[124] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production

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Norway going to secondary aluminum producers ranged between *** percent and *** percent during the three calendar years of the POI. *Id*.

[121] CR/PR at Table 2.5. The regions include the Northeast, Midwest, Southeast, Central Southwest, Mountain, and Pacific Coast. *Id*.

[122] CR/PR at Tables 5.4 to 5.5; *see also* Petition at 27.

[123] CR/PR at Table 4.10.

[124] 19 U.S.C. §§ 1671b(a), 1673b(a).

operations.[125] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[126] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[127] No single factor is dispositive, and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[128]

Although the statute requires the Commission to determine whether there is a reasonable indication that the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[129] it does not define the phrase "by reason of," indicating that this aspect of the injury analysis is left to the Commission's reasonable exercise of its discretion.[130] In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[131]

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition

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[125] 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[126] 19 U.S.C. § 1677(7)(A).

[127] 19 U.S.C. § 1677(7)(C)(iii).

[128] 19 U.S.C. § 1677(7)(C)(iii).

[129] 19 U.S.C. §§ 1671b(a), 1673b(a).

[130] *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) ("{T}he statute does not 'compel the commissioners' to employ {a particular methodology}."), *aff'g,* 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

[131] The Federal Circuit, in addressing the causation standard of the statute, observed that "{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement." *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that "this court requires evidence in the record 'to show that the harm occurred "by reason of" the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.'" *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass'n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[132] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[133] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[134] It is clear that the existence of injury caused by other factors does not compel a negative determination.[135]

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[132] SAA at 851-52 ("{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. 96-249 at 75 (1979) (the Commission "will consider information which indicates that harm is caused by factors other than less-than-fair-value imports."); H.R. Rep. 96-317 at 47 (1979) ("in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;" those factors include "the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry"); *accord Mittal Steel*, 542 F.3d at 877.

[133] SAA at 851-52 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports."); *Taiwan Semiconductor Industry Ass'n,* 266 F.3d at 1345 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports ... . Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports." (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int'l Trade 2002) ("{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury" or make "bright-line distinctions" between the effects of subject imports and other causes.); *see also Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that "{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, *i.e*., it is not an 'other causal factor,' then there is nothing to further examine regarding attribution to injury"), *citing Gerald Metals,* 132 F.3d at 722 (the statute "does not suggest that an importer of LTFV goods can escape countervailing duties by finding some tangential or minor cause unrelated to the LTFV goods that contributed to the harmful effects on domestic market prices.").

[134] S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

[135] *See Nippon Steel Corp*., 345 F.3d at 1381 ("an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the 'dumping' need not be the sole or principal cause of injury.").

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject imports."[136] The Commission ensures that it has "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other sources to the subject imports."[137] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[138]

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.[139] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[140]

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is a reasonable indication of material injury or threat of material injury by reason of subject imports.

1. Captive Production

The domestic industry internally transfers a portion of its production of silicon metal for the manufacturing of downstream products. We therefore consider the applicability of the statutory captive production provision, and whether to focus our analysis primarily on the

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[136] *Mittal Steel*, 542 F.3d at 876 &78; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology."), *citing United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

[137] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 877-79. We note that one relevant "other factor" may involve the presence of significant volumes of price-competitive nonsubject imports in the U.S. market, particularly when a commodity product is at issue. In appropriate cases, the Commission collects information regarding nonsubject imports and producers in nonsubject countries in order to conduct its analysis.

[138] *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); *see also Mittal Steel*, 542 F.3d at 879 ("*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was 'by reason' of subject imports.").

[139] We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

[140] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp.*, 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

merchant market when assessing market share and the factors affecting the financial performance of the domestic industry.[141]

a) Arguments of the Parties

Petitioners contend that the captive production provision does not apply in these investigations.[142] They note the Commission's finding from its 2018 and 2021 investigations of silicon metal that the captive production provision did not apply in those investigations because the second statutory criterion was not satisfied.[143]

Respondents raised no argument concerning whether the captive production provision applies in these investigations.

b) Analysis

Threshold Criterion. The provision can be applied only if, as a threshold matter, significant production of the domestic like product is internally transferred and significant production is sold in the merchant market. The domestic industry internally transferred between *** and *** percent of U.S. producers' U.S. shipments during the POI, while it sold

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[141] The captive production provision can be applied only if, as a threshold matter, significant production of the domestic like product is internally transferred and significant production is sold in the merchant market. The captive production provision, 19 U.S.C. § 1677(7)(C)(iv), as amended by the Trade Preferences Extension Act ("TPEA") of 2015, provides:

> (iv) CAPTIVE PRODUCTION – If domestic producers internally transfer significant production of the domestic like product for the production of a downstream article and sell significant production of the domestic like product in the merchant market, and the Commission finds that-
>
> > (I) the domestic like product produced that is internally transferred for processing into that downstream article does not enter the merchant market for the domestic like product, and
> > (II) the domestic like product is the predominant material input in the production of that downstream article.

The SAA indicates that where a domestic like product is transferred internally for the production of another article coming within the definition of the domestic like product, such transfers do not constitute internal transfers for the production of a "downstream article" for purposes of the captive production provision. SAA at 853.

The TPEA eliminated what had been the third statutory criterion of the captive production provision. Pub. L. 114-27, § 503(c).

[142] Pet. Postconference Br., Response to Staff Question 2, Exh. 1 at A-4.

[143] Pet. Postconference Br., Response to Staff Question 2, Exh. 1 at A-4, *citing* USITC Pub. 4773 at 19 n.102 and USITC Pub. 5180 at 17-18.

between *** and *** percent of its U.S. shipments commercially.[144] Thus, the record shows that a significant portion of production of silicon metal is both internally transferred and sold in the merchant market, in satisfaction of the threshold criterion.

First Statutory Criterion. The first criterion of the captive consumption provision focuses on whether the domestic like product that is internally transferred for further processing into downstream articles is in fact sold in the merchant market for the domestic like product.[145] The domestic industry further processed into out-of-scope downstream articles between *** and *** percent of its internal transfers during the POI, while *** percent was diverted to the merchant market for the domestic like product in 2022.[146] As nearly all internal transfers were processed into downstream articles and did not enter the merchant market for the domestic like product, this criterion appears met.

Second Statutory Criterion. In applying the second statutory criterion, the Commission generally considers whether the domestic like product is the predominant material input into a downstream product by referring to its share of the raw material cost of the downstream product,[147] but the Commission has also construed "predominant" material input to mean the main or strongest element, and not necessarily a majority of the inputs by value.[148]

In these investigations, domestic producers reported that internally transferred silicon metal accounted for *** percent of the quantity and *** percent of the value of the finished cost of the downstream articles.[149] Based on these shares, the second criterion appears unmet.

[144] CR at Table 3.10.

[145] *See*, *e.g.*, *Hot-Rolled Steel Products from Argentina and South Africa*, Inv. Nos. 701-TA-404, 731-TA-898, 905 (Final), USITC Pub. 3446 at 15-16 (Aug. 2001); *Certain Cold-Rolled Steel Products from Argentina, Brazil*, *China*, *Indonesia*, *Japan*, *Russia*, *Slovakia*, *South Africa*, *Taiwan*, *Turkey and Venezuela*, Inv. Nos. 701-TA-393 and 731-TA-829-40 (Final) (Remand), USITC Pub. 3691 at 2 & n.19 (May 2004).

[146] CR/PR at Table 3.11.

[147] *See, e.g.*, *Emulsion Styrene-Butadiene Rubber from Czechia and Russia,* Inv. Nos. 731-TA-1575 and 731-TA-1577 (Final), USITC Pub. 5392 at 19 (Jan. 2023) (confidential version at 25, EDIS Doc. No. 787280) ("In these investigations, Goodyear indicated that internally consumed ESBR accounted for *** percent of the value and *** percent of the total weight of raw materials used to produce tires. We find that these shares are insufficient to satisfy this criterion").

[148] *See Polyvinyl Alcohol from Germany and Japan*, Inv. Nos. 731-TA-1015-16 (Final), USITC Pub. 3604 at 15 n.69 (June 2003).

[149] CR/PR at Table 3.13.

Conclusion. Because the second criteria of the captive production provision does not appear to be satisfied, we find that the captive production provision does not apply.

1. Demand Conditions

U.S. demand for silicon metal is driven by demand for the end uses in which it is used as an input.[150] Chemical producers, primary aluminum producers, and secondary aluminum producers are the principal end users of silicon metal.[151] Silicon metal is used in a variety of applications, including in the production of aluminum (automobiles/commercial), chemicals (silicones), and polysilicon (solar and electronics).[152]

*** U.S. producers reported that U.S. demand for silicon metal fluctuated upward during the POI, and the vast majority of U.S. importers reported that U.S. demand for silicon metal steadily increased or fluctuated upward during the POI.[153]

Apparent U.S. consumption of silicon metal declined from *** short tons in 2022 to *** short tons in 2023, and then increased to *** short tons in 2024, a level *** percent lower than in 2022.[154]

2. Supply Conditions

The domestic industry was the second-largest supplier of silicon metal to the U.S. market in 2022 and 2024 and the largest supplier to the U.S. market in 2023.[155] The domestic industry's share of apparent U.S. consumption increased from *** percent in 2022 to *** percent in 2023, but then declined to *** percent in 2024, for an overall decline of *** percentage points between 2022 and 2024.[156]

The domestic industry consists of two domestic producers, Ferroglobe and MS Silicon.[157] In 2024, Ferroglobe accounted for *** percent of U.S. production of silicon metal, while MS

[150] CR/PR at 2.9.

[151] CR/PR at 1.8-1.9 & 2.9.

[152] CR/PR at 1.8-1.9 & 2.9. Six of 10 responding importers reported that the U.S. market for silicon metal is subject to fluctuations both during and across years and is affected by overall silicon demand and demand for aluminum and polysilicon products that use silicon metal. *Id*. at 2.9.

[153] CR/PR at Table 2.7. Six importers reported that U.S. demand for silicon metal steadily increased or fluctuated upward while two importers reported that U.S. demand for silicon metal fluctuated downward since January 1, 2022. *Id.*

[154] CR/PR at Tables 4.11 & C.1.

[155] CR/PR at Table C.1.

[156] CR/PR at Table C.1.

[157] CR/PR at Table 3.1.

Silicon accounted for *** of domestic production.[158] The domestic industry's reported practical capacity was below apparent U.S. consumption throughout the POI.[159] The industry's practical capacity declined overall by *** percent from 2022 to 2024, declining from *** short tons in 2022 to *** short tons in 2023 and *** short tons in 2024.[160] The industry's capacity utilization fluctuated but increased overall by *** percentage points from 2022 to 2024, declining from *** percent in 2022 to *** percent in 2023, before increasing to *** percent in 2024.[161] Ferroglobe, the largest domestic producer of silicon metal, idled its facility in Selma, Alabama beginning in December 2023, and it remained closed for the rest of the POI.[162]

Cumulated subject imports from Australia, Laos, and Norway were the smallest source of supply to the U.S. market throughout POI, but increased overall from 2022-2024 and especially between 2023 and 2024.[163] Cumulated subject imports' market share increased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024, for an overall increase of *** percentage points from 2022-2024.[164]

Nonsubject imports were the largest source of supply to the U.S. market in 2022 and 2024 and the second-largest source of supply in 2023.[165] Nonsubject imports' market share declined from *** percent in 2022 to *** percent in 2023, but then increased to *** percent in 2024, for an overall decline of *** percentage points from 2022 to 2024.[166] The largest sources of nonsubject imports during the POI were Brazil and Canada.[167]

Both U.S. producers and all responding U.S. importers reported that they did not experience supply constraints during the POI.[168]

3. Substitutability and Other Conditions

Based on the record in the preliminary phase of these investigations, we find that there is a high degree of substitutability between domestically produced silicon metal and silicon metal imported from subject sources.[169] As discussed in section VI.B. above, both U.S.

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[158] CR/PR at Table 3.1.

[159] CR/PR at Table C.1. Petitioners acknowledge that the domestic industry is unable to satisfy all the demand for silicon metal in the U.S. market. Petitioners' Postconference Br. at 22.

[160] CR/PR at Tables 3.5 & C.1.

[161] CR/PR at Tables 3.7 & C.1.

[162] CR/PR at Tables 3.3 & 3.4.

[163] CR/PR at Table C.1.

[164] CR/PR at Table C.1.

[165] CR/PR at Table C.1.

[166] CR/PR at Table C.1.

[167] CR/PR at Table 4.3.

[168] CR/PR at 2.8.

[169] CR/PR at 2.10.

producers and the majority of responding importers reported that the domestic like product and subject imports from all sources are always or frequently interchangeable.[170] Differences in some purchasing factors, including silicon metal composition characteristics and reliability of supply, may limit substitutability to some extent.[171]

We also find that price is an important factor in purchasing decisions for silicon metal, among other important factors. Responding purchasers reported that price was among the top three factors that influenced their purchasing decisions, along with quality and availability/supply.[172] Of those factors, quality was the most frequently cited top factor (cited by 10 firms), followed by price (four firms), and availability/supply (three firms).[173] Both U.S. producers and the vast majority of responding U.S. importers reported that differences other than price between subject imports and the domestic like product were sometimes or never significant.[174]

During the POI, U.S. producers sold the majority of their silicon metal to chemical producers, lesser but appreciable quantities to secondary aluminum producers and other end users, and very small quantities to primary aluminum producers and distributors.[175] U.S. importers sold substantial quantities of subject merchandise to secondary aluminum producers, distributors, and other end users throughout the POI; small quantities of subject merchandise to chemical producers in 2022 and 2023; substantial quantities to chemical producers in 2024; and small quantities of subject merchandise to primary aluminum producers during the POI.[176] The *** shipments by domestic producers were produced-to-order, with lead times averaging *** days.[177] U.S. importers reported that the majority of their shipments were from U.S. inventories with lead times averaging *** days, lesser but substantial quantities of their shipments were produced-to-order with lead times averaging *** days, and smaller but appreciable quantities of their shipments were from foreign inventories with lead times averaging *** days.[178]

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[170] CR/PR at Tables 2.9 & 2.10.

[171] CR/PR at 2.10 & Table 2.10.

[172] CR/PR at Table 2.8.

[173] CR/PR at Table 2.8. Quality was the most frequently cited second-most important factor (cited by six firms), followed by price (three firms), and availability/supply (two firms). *Id*. Availability/supply was the most frequently cited third-most important factor (cited by six firms), followed by price (five firms), and quality (two firms). *Id*.

[174] CR/PR at Tables 2.11 & 2.12.

[175] CR/PR at Table 2.1.

[176] CR/PR at Table 2.4 (less Angola and Thailand).

[177] CR/PR at 2.11.

[178] CR/PR at 2.11.

*** and nearly all responding importers reported setting prices using transaction-by-transaction negotiations and contracts.[179] Both U.S. producers reported selling *** of their silicon metal through annual contracts, while also selling small quantities via short-term contracts, long-term contracts, and spot sales.[180] Responding U.S. importers reported selling *** of their silicon metal through annual contracts, while also selling lesser but substantial quantities via short-term contracts, long-term contracts, and spot sales.[181] U.S. producers also reported that their annual contracts *** for price renegotiation, fix *** (and in the case of ***, fix quantity as well), and *** prices to raw material costs, and that silicon metal prices are set using various price indices, such as those published in the CRU's Monitor or Platts' Metals Week.[182] On the other hand, information available suggests that a large portion of a U.S. importers' prices were not fixed to price indices.[183]

Silicon metal is produced from mined quartzite and consists almost entirely of elemental silicon with very small amounts of impurities (such as iron, calcium, and aluminum).[184] U.S. producers reported that raw materials as a share of their cost of goods sold ("COGS") increased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024.[185]

Effective April 5, 2025, silicon metal originating in Angola, Australia, Laos, Norway, and Thailand became subject to an additional 10 percent ad valorem duty under the International

[179] CR/PR at Table 5.2.

[180] CR/PR at Table 5.3.

[181] CR/PR at Table 5.3.

[182] CR/PR at 5.5. The prices published in these indices, which the domestic producers base their prices on, reflect sales of silicon metal to the secondary aluminum market (*i.e.,* the market demanding the lowest purity silicon metal). Petitioners' Postconference Br. at 19-20. According to Petitioner, the prices in the secondary aluminum market are referenced by purchasers in the other parts of the market, which it alleges causes pricing in all parts of the silicon market to often move together. Respondent Elkem appears to disagree and suggest that the domestic producers' pricing practices could explain any injury to the domestic industry since ***, which demands a higher purity silicon metal than the silicon metal sold in the secondary aluminum market. *See* Elkem's Postconference Br. at 12-13. The Commission will explore this issue further in any final phase of the investigations.

[183] Simcoa's Postconference Br. at Responses to Commission Staff Questions p. 6 and Exh. 1.

[184] CR/PR at 5.1.

[185] CR/PR at Table 6.3.

Emergency Economic Powers Act ("IEEPA").[186] The imposition of these duties is currently subject to a legal challenge before the Court of Appeals for the Federal Circuit.[187]

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[188]

Cumulated subject imports, by volume, increased overall by 84.2 percent between 2022 and 2024, declining from 20,204 short tons in 2022 to 16,877 short tons in 2023, before increasing to 37,218 short tons in 2024.[189]

Cumulated subject imports' share of apparent U.S. consumption increased by *** percentage points from 2022 to 2024, increasing from *** percent of apparent U.S. consumption in 2022 to *** percent in 2023 and *** percent in 2024.[190] Most of the increase in cumulated subject imports' share of apparent U.S. consumption over the POI occurred between 2023 and 2024, as cumulated subject imports captured *** percentage points of market share from the domestic industry.[191]

Based on the record in the preliminary phase of these investigations, we find that the volume of cumulated subject imports and the increase in that volume are significant in absolute terms and relative to consumption in the United States.[192]

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[186] CR/PR at 1.7. Effective April 9, 2025, Angola was instead assigned an individualized country duty of 32 percent ad valorem, Laos was instead assigned an individualized country duty of 48 percent ad valorem, Norway was instead assigned an individualized country duty of 15 percent ad valorem, and Thailand was instead assigned an individualized country duty of 36 percent ad valorem. However, effective April 10, 2025, individualized country duties were suspended and the duty rate for silicon metal originating in Angola, Laos, Norway, and Thailand was returned to 10 percent. *Id.* This information reflects tariffs in effect as of June 6, 2025, the day the record closed with respect to the submission of factual information.

[187] CR/PR at 1.7.

[188] 19 U.S.C. § 1677(7)(C)(i).

[189] CR/PR at Tables 4.2 & C.1 (not including Angola and Thailand).

[190] CR/PR at Tables 4.11 & C.1 (not including Angola and Thailand).

[191] CR/PR at Tables 4.11 & C.1 (not including Angola and Thailand). The domestic industry's share of apparent U.S. consumption declined by *** percentage points from 2023 to 2024, declining from *** percent in 2023 to *** percent in 2024. *Id*. Nonsubject imports' share of apparent consumption increased by *** percentage points from 2023 to 2024, increasing from *** percent in 2023 to *** percent in 2024. *Id*.

[192] As a ratio to domestic production, cumulated subject imports declined from *** percent in 2022 to *** percent in 2023, but then increased to *** percent in 2024. CR/PR at Table 4.2.

D. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of subject imports, the Commission shall consider whether –

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[193]

As discussed in section VII.B.3 above, we find a high degree of substitutability between subject imports and the domestic like product and that price is an important factor in purchasing decisions for silicon metal.

The Commission collected quarterly quantity and f.o.b. pricing data on sales of three silicon metal products shipped to unrelated U.S. customers during January 2022-December 2024.[194] *** and three U.S. importers provided usable pricing data for sales of the requested products, although not all firms reported pricing data for all products for all quarters.[195] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' U.S. commercial shipments of silicon metal in 2024, *** percent of U.S. shipments of subject imports from Australia, *** percent of U.S. shipments of subject imports from Laos, and *** percent of U.S. shipments of subject imports from Norway.[196] Nearly all the pricing data

[193] 19 U.S.C. § 1677(7)(C)(ii).

[194] CR/PR at 5.5. The three pricing products are:

Product 1.-- Sold to primary aluminum producers; silicon metal less than 99.99% pure that contains a minimum of 98.5% silicon, a maximum of 1.00% iron, a maximum of 0.07% calcium, and no restriction of the aluminum content.

Product 2.-- Sold to secondary aluminum producers; silicon metal less than 99.99% pure that contains a minimum of 97.0% silicon, a maximum of 2.00% iron, a maximum of .4% calcium, and no restriction of the aluminum content.

Product 3.-- Sold to chemical and/or polysilicon manufacturers; silicon metal less than 99.99% pure that contains a minimum of 98.0% silicon, a maximum of 1.50% iron, a maximum of 0.2% calcium, and a maximum of 0.4% aluminum. *Id.*

[195] CR/PR at 5.6.

[196] CR/PR at 5.6.

reported by importers of subject merchandise were for pricing product 2, silicon metal sold to secondary aluminum producers.[197]

Cumulated subject imports undersold the domestic like product in 21 of 43 quarterly comparisons, or 48.8 percent of the time, with underselling margins ranging between *** and *** percent, and averaging *** percent.[198] They oversold the domestic like product in the remaining 22 quarterly comparisons, or 51.2 percent of the time, with overselling margins ranging between *** percent and *** percent and averaging *** percent.[199] During the POI, there were reported subject import sales of *** short tons in the quarters with underselling, representing *** percent of total reported subject import sales volume, compared to reported subject import sales of *** short tons in quarters with overselling, representing *** percent of total reported subject import sales volume.[200] The majority of subject import underselling in terms of both quarterly comparisons and reported sales volume was for pricing product 2 (sold to secondary aluminum producers).[201]

We note that underselling by cumulated subject imports intensified during the POI and became pervasive in 2024. In 2024, cumulated subject imports undersold the domestic like product in 13 of 19 quarterly comparisons, or 68.4 percent of the time, corresponding to reported subject import sales of *** short tons, representing *** percent of total reported subject import sales volume that year.[202]

We have also considered purchasers' responses to the Commission's lost sales/lost revenue survey. Of the 14 responding purchasers, nine reported that, since January 1, 2022, they had purchased subject silicon metal from Australia, Laos, and Norway instead of the domestic like product, and seven of these purchasers reported that subject imports were lower priced than the domestic like product.[203] Four of those purchasers also reported that price was a primary reason for their decision to purchase *** short tons of silicon metal imported from

[197] *See* CR/PR at Tables 5.4-5.7. Data for pricing product 1, product sold to primary aluminum producers, were reported in 12 quarters for subject imports from one country, Australia. *Id.* at Tables 5.4 & 5.7. Data for pricing product 3, product sold to chemical and/or polysilicon producers, were reported in six quarters for subject imports from one country, Australia. CR/PR at Tables 5.6 & 5.7.

[198] CR/PR at Table 5.9.

[199] CR/PR at Table 5.9.

[200] CR/PR at Table 5.9 & *derived from* Table 5.9.

[201] CR/PR at Table 5.9.

[202] CR/PR at Revised Table 5.12 (less Angola and Thailand).

[203] CR/PR Table 5.15.

the subject countries rather than the domestic like product,[204] equivalent to *** percent of all reported purchases of cumulated subject imports during the POI.[205]

Based on the high degree of substitutability between the domestic like product and cumulated subject imports, the importance of price in purchasing decisions for silicon metal, the pricing data showing predominant underselling in 2024, and the purchaser responses regarding comparative prices and confirmed lost sales, we find that cumulated subject imports undersold the domestic like product to a significant degree. As cumulated subject imports intensified their underselling from 2023 to 2024, predominantly underselling the domestic like product in 2024, cumulated subject imports gained *** percentage points of market share at the direct expense of the domestic industry.[206]

We have also examined price trends during the POI. Prices for all three domestically produced pricing products generally declined from the first quarter of 2022 through the first quarter of 2024, at which point they increased slightly until the fourth quarter of 2024.[207] Prices for all domestically produced pricing products were lower in the last quarter of the POI than in the first quarter.[208] Between the first and last quarters of the POI, reported domestic sales prices declined by *** percent for product 1, *** percent for product 2, and *** percent for product 3.[209] Prices for all three pricing products imported from Australia and Norway followed the same general trend as prices for the domestic product, declining overall during the POI.[210] Between the first and last quarters of the POI, reported sales prices for subject imports from Australia declined *** percent for product 1, *** percent for product 2, and *** percent for product 3.[211] Reported sales prices for subject imports of product 2 from Norway declined

[204] CR/PR at Table 5.15.

[205] *Derived from* CR/PR at Tables 5.13 & 5.15.

[206] CR/PR at Table C.1. Cumulated subject imports' market share increased from *** percent in 2023 to *** percent in 2024, while the domestic industry's market share declined by *** percentage points from 2023 to 2024, declining from *** percent in 2023 to *** percent in 2024. *Id*. Nonsubject imports' market share increased by *** percentage points from 2023 to 2024, increasing from *** percent in 2023 to *** percent in 2024. *Id*. Over the full POI, subject imports gained *** percentage points of market share, while the domestic industry and nonsubject imports lost *** and *** percentage points of market share, respectively. *Id*.

[207] *See* CR/PR at Tables 5.4-5.7 & Figs. 5.2-5.4.

[208] *See* CR/PR at Table 5.7 and Figs. 5.2, 5.3, and 5.4.

[209] CR/PR at Table 5.7. The domestic industry's average unit values ("AUVs") of net sales and U.S. shipments decreased in every year of the POI. *Id*. at Table C.1.

[210] CR/PR at Table 5.7. There was no reported pricing data for subject imports from Angola. CR/PR at 5.6 n.5.

[211] CR/PR at Table 5.7.

by *** percent.[212] We note, however, that these price declines largely occurred during the 2022-2023 period, when apparent U.S. consumption declined by *** percent.[213] The majority of the price declines also occurred during a period of lower subject import volume, with subject imports accounting for *** percent of apparent U.S. consumption in 2023, after which it nearly *** to *** percent.[214] Domestic prices generally increased in 2024, as apparent U.S. consumption increased by *** percent.[215]

We have also considered whether cumulated subject imports prevented price increases for domestically produced silicon metal which otherwise would have occurred to a significant degree. The domestic industry's ratio of COGS to net sales increased by *** percentage points from 2022 to 2024, increasing from *** percent in 2022 to *** percent in 2023 and *** percent in 2024.[216] We recognize that the domestic industry's COGS-to-net-sales ratio increased most sharply during the 2022-2023 period, by *** percentage points, when apparent U.S. consumption declined by *** percent.[217] Between 2023 and 2024, however, the domestic industry's COGS-to-net-sales ratio increased by an additional *** percentage points, even as apparent U.S. consumption increased by *** percent.[218] Over that 2023-2024 period, as the volume of lower priced subject imports increased by 120.5 percent and captured *** percentage points of market share from the domestic industry, the industry's AUV of net sales declined by more than its unit COGS, and the industry experienced a cost-price squeeze and the domestic industry's operating and net sales income turned to losses.[219] Accordingly, we find

[212] CR/PR at Table 5.7. There was no reported pricing data for subject imports from Norway for products 1 and 3. *Id*.

[213] CR/PR at Tables 5.4-5.7 & C.1.

[214] CR/PR at C.1. One of 10 responding purchasers reported that the domestic industry reduced its prices by *** percent during the POI to compete with lower priced subject imports. *Id*. at Table 5.15.

[215] CR/PR at Tables 5.4-5.7 & C.1.

[216] CR/PR at Tables 6.1 & C.1.

[217] CR/PR at Table C.1.

[218] CR/PR at Table C.1.

[219] Between 2023 and 2024, the domestic industry's net sales AUV (in dollars per short ton) declined by $*** (or by *** percent), from $*** in 2023 to $*** in 2024, while its unit COGS (in dollars per short ton) declined by $*** (or by *** percent), from $*** in 2023 to $*** in 2024. CR/PR at Tables 6.5 & C.1. The decline in the domestic industry's unit COGS during the 2023-2024 period was driven primarily by the *** percent decline in unit other factory costs, which appears to be attributable to Ferroglobe's idling of its facility in Selma, Alabama beginning in December 2023 for the remainder of the POI. *See, e.g.*, CR/PR at Tables 3.3, 3.4, 5.1, 6.1, C.1, and Fig. 5.1. By contrast, unit electricity costs increased, unit raw material and direct labor costs, *i.e.*, the more variable components of unit COGS, were relatively flat, and unit byproduct revenue declined. *Id.* We intend to examine this issue further in any final phase of the investigations.

that cumulated subject imports suppressed prices for the domestic like product to a significant degree.

In sum, based on the record in the preliminary phase of these investigations, we find that cumulated subject imports significantly undersold the domestic like product, thereby capturing market share from the domestic industry and suppressing prices for the domestic like product to a significant degree during the 2023-2024 period. Accordingly, we find that cumulated subject imports had significant price effects.

E. Impact of the Subject Imports[220]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry." These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, research and development ("R&D"), and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[221]

The domestic industry's output, employment, and financial performance indicia generally declined over the POI and the industry suffered operating and net losses by 2024. The industry's performance declined from 2022 to 2023 as apparent U.S. consumption declined *** percent. When apparent U.S. consumption increased *** percent from 2023 to 2024, however, the domestic industry was unable to fully capitalize on the demand recovery as increased volumes of cumulated subject imports captured *** percentage points of market share from the industry, driven by significant underselling, and suppressed domestic prices to a significant degree.[222]

Most of the domestic industry's output indicia generally declined over the POI. The domestic industry's practical capacity declined by *** percent from 2022 to 2024, falling from

[220] In its notice initiating the antidumping duty investigations, Commerce initiated investigations based on estimated dumping margins of 328.89 percent for imports from Australia, 94.44 percent for imports from Laos, and 102.08 percent for imports from Norway. *Silicon Metal From Angola, Australia, the Lao People's Democratic Republic, and Norway: Initiation of Less-Than-Fair-Value Investigations*, 90 Fed. Reg. 21741, 21744 (May 21, 2025).

[221] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act ("TPEA") of 2015, Pub. L. 114-27.

[222] CR/PR at Table C.1.

*** short tons in 2022 to *** short tons in 2023, and *** short tons in 2024.[223] The industry's production quantity declined irregularly by *** percent from 2022 to 2024, decreasing from *** short tons in 2022 to *** short tons in 2023, and then rising to *** short tons in 2024.[224] Because the domestic industry's production declined to a greater degree than its capacity from 2022 to 2023, its capacity utilization decreased from *** percent in 2022 to *** percent in 2023; the industry's production remained relatively stable while its capacity declined from 2023 to 2024, resulting in the domestic industry's capacity utilization increasing to *** percent in 2024.[225]

The domestic industry's employment indicia also generally declined over the POI. The industry's number of production and related workers ("PRWs") fell by *** percent over the POI, declining from *** PRWs in 2022 to *** PRWs in 2023 and *** PRWs in 2024.[226] Hours worked declined by *** percent over the POI, decreasing from *** hours in 2022 and 2023 to *** hours in 2024.[227] Wages paid declined irregularly by *** percent over the POI, rising from $*** in 2022 to $*** in 2023, and then falling to $*** in 2024.[228] Productivity (in short tons contained silicon per 1,000 hours) increased irregularly by 5.2 percent over the POI, falling from *** in 2022 to *** in 2023, and then rising to *** in 2024.[229]

The industry's U.S. shipments decreased by *** percent over the POI, falling from *** short tons in 2022 to *** short tons in 2023 and *** short tons in 2024.[230] The domestic industry's share of apparent U.S. consumption declined irregularly by *** percentage points over the POI, increasing from *** percent in 2022 to *** percent in 2023, and then declining to *** percent in 2024.[231] The domestic industry's end-of-period inventories declined irregularly by *** percent over the POI, falling from *** short tons in 2022 to *** short tons in 2023, and then increasing to *** short tons in 2024.[232] As a ratio to U.S. shipments, the domestic industry's end-of-period inventories declined irregularly by *** percentage points over the POI, falling from *** percent in 2022 to *** percent in 2023, and then increasing to *** percent in 2024.[233]

[223] CR/PR at Tables 3.5, C.1.
[224] CR/PR at Tables 3.5, C.1.
[225] CR/PR Tables C-2 & G-6.
[226] CR/PR at Tables 3.14, C.1.
[227] CR/PR at Tables 3.14, C.1.
[228] CR/PR at Tables 3.14, C.1.
[229] CR/PR at Tables 3.14, C.1.
[230] CR/PR at Tables 3.9, C.1.
[231] CR/PR at Tables 4.11, C.1.
[232] CR/PR at Tables 3.13, C.1.
[233] CR/PR at Tables 3.13, C.1.

The domestic industry's financial performance steadily deteriorated over the POI, and the industry's operating and net income declined from 2022 to 2023 and turned to losses in 2024. The domestic industry's net sales value declined by *** percent over the POI, falling from $*** in 2022 to $*** in 2023 and $*** in 2024.[234] Gross profit declined by *** percent over the POI, falling from $*** in 2022 to $*** in 2023 and $*** in 2024.[235] Operating income declined from $*** in 2022 to $*** in 2023, and *** in 2024.[236] Net income declined from $*** in 2022 to $*** in 2023 and *** in 2024.[237] The industry's ratio of operating income to net sales fell from *** percent in 2022 to *** percent in 2023 and *** percent in interim 2024.[238] The industry's ratio of net income to net sales fell from *** percent in 2022 to *** percent in 2023 and *** percent in 2024.[239]

The domestic industry's capital expenditures fell by *** percent over the POI, declining from $*** in 2022 to $*** in 2023 and $*** in 2024.[240] The domestic industry's research and development expenses were $*** in each year of the POI.[241] The industry's net assets declined by *** percent over the POI, falling from $*** in 2022 to $*** in 2023 and $*** in 2024.[242] The industry's return on assets declined from *** percent in 2022 to *** percent in 2023 to *** percent in 2024.[243]

Cumulated subject imports that are highly substitutable for the domestic like product entered the U.S. market in significant and increasing volumes during the POI, as subject import underselling intensified. Between 2023 and 2024, as subject import underselling intensified and became predominant, cumulated subject imports captured *** percentage points of market share from the domestic industry and suppressed domestic prices to a significant degree, placing the industry in a cost-price squeeze. As cumulated subject imports captured market share from the domestic industry during the 2023-2024 period, the domestic industry's production, capacity utilization, employment, U.S. shipments, revenues, and profits were lower than they would have been otherwise.[244] The domestic industry's financial performance, including its operating income, net income, and operating and net income margins, was also

[234] CR/PR at Tables 6.1, C.1.
[235] CR/PR at Tables 6.1, C.1.
[236] CR/PR at Tables 6.1, C.1.
[237] CR/PR at Tables 6.1, C.1.
[238] CR/PR at Tables 6.1, C.1.
[239] CR/PR at Tables 6.1, C.1.
[240] CR/PR at Tables 6.9, C.1.
[241] CR/PR at Table 6.9, C.1.
[242] CR/PR at Tables 6.11, C.1.
[243] CR/PR at 6.12, Table C.1.
[244] CR/PR at Table C.1.

weaker than it would have been had cumulated subject imports not suppressed domestic prices during the period. Accordingly, we find that there is a reasonable indication that cumulated subject imports had a significant impact on the domestic industry.[245]

We have also considered whether there are other factors that may have had an impact on the domestic industry to ensure that we are not attributing injury from such other factors to subject imports. We recognize that nonsubject imports maintained a larger presence in the U.S. market than cumulated subject imports throughout the POI.[246] However, the market share of nonsubject imports declined irregularly by *** percentage points during the POI, from *** percent in 2022 to *** percent in 2024.[247] While the market share of nonsubject imports increased from 2023 to 2024, nonsubject imports captured less market share from the domestic industry than cumulated subject imports over the period.[248] Moreover, the AUVs of nonsubject imports were higher than those of cumulated subject imports in both 2023 and 2024.[249] Consequently, nonsubject imports cannot explain either the domestic industry's loss of market share to cumulated subject imports or the suppression of domestic prices by reason of cumulated subject imports.

We also recognize that apparent U.S. consumption declined irregularly by *** percent from 2022 to 2024.[250] After the *** percent decline in apparent U.S. consumption from 2022 to 2023, however, the domestic industry was unable to fully capitalize on the *** percent increase in apparent U.S. consumption from 2023 to 2024, as cumulated subject imports

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[245] Respondent Elkem contends that the domestic industry was supply constrained beginning in the second half of the POI with Ferroglobe idling its Selma plant in October 2023 and MS Silicon informing customers that it was sold out. Elkem's Post Conference Br. at 11-12. The record, however, indicates that the domestic industry had excess capacity in 2023 and 2024. CR/PR at Table C.1. Ferroglobe also contends that its reason for shutting down its Selma plant was low-priced subject import competition. Petitioners' Postconference Br. at 32. The Commission will explore this issue further in any final phase of these investigations.

[246] CR/PR at Table C.1.

[247] CR/PR at Table C.1.

[248] CR/PR at Table C.1. The market share of nonsubject imports increased by *** percentage points from 2023 to 2024, increasing from *** percent in 2023 to *** percent in 2024. *Id*. The market share of cumulated subject imports increased by *** percentage points from 2023 to 2024, increasing from *** percent in 2023 to *** percent in 2024. *Id*. The domestic industry's market share declined by *** percentage points from 2023 to 2024, declining from *** percent in 2023 to *** percent in 2024. *Id*.

[249] CR/PR Table C.1 (not including Angola or Thailand). The AUVs of nonsubject imports were lower than the AUVs of the domestic industry's net sales in 2022 and 2024, although they were higher in 2023. *Id*. We recognize that AUV comparisons may be influenced by differences in product mix and changes in product mix over time. We intend to further examine the impact of nonsubject imports in any final phase of these investigations.

[250] CR/PR at Table C.1.

captured *** percentage points of market share from the industry, driven by significant underselling, and suppressed domestic prices to a significant degree.[251]

In sum, based on the record of the preliminary phase of these investigations, we find that cumulated subject imports had a significant impact on the domestic industry. Consequently, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of cumulated subject imports from Australia, Laos, and Norway.

VIII. Reasonable Indication of Threat of Material Injury by Reason of Subject Imports from Angola and Thailand

We have determined that there is a potential that subject imports from Angola and Thailand will imminently account for more than 3 percent of all subject merchandise imported into the United States. Therefore, we need to determine whether there is a reasonable indication that the domestic industry is threatened with material injury by reason of subject imports from Angola that are allegedly sold at LTFV and subject imports from Thailand that are allegedly subsidized by the government of Thailand.

A. Legal Standard

Section 771(7)(F) of the Tariff Act directs the Commission to determine whether there is a reasonable indication that the U.S. industry is threatened with material injury by reason of subject imports by analyzing whether "further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted."[252] The Commission may not make such a determination "on the basis of mere conjecture or supposition," and considers the threat factors "as a whole" in making its determination whether dumped or subsidized imports are imminent and whether material injury by reason of subject imports would occur unless an order is issued.[253] In making our determinations, we consider all statutory threat factors that are relevant to these investigations.[254]

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[251] CR/PR at Table C.1.

[252] 19 U.S.C. § 1677(7)(F)(ii).

[253] 19 U.S.C. § 1677(7)(F)(ii).

[254] These factors are as follows:

(I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement) and whether imports of the subject merchandise are likely to increase,

(Continued…)

B. Cumulation for Threat

Under Section 771(7)(H) of the Tariff Act, the Commission may "to the extent practicable" cumulatively assess the volume and price effects of subject imports from all countries as to which petitions were filed on the same day if the requirements for cumulation in the material injury context are satisfied.[255]

Imports from all other sources subject to investigation remain eligible for cumulation with subject imports from Angola and Thailand for purposes of our threat analysis.[256] Thus, subject imports from Australia, Laos, and Norway are eligible for cumulation with subject imports from Laos and Thailand for purposes of our threat of material injury analysis.[257]

Petitioners argue that, given the reasonable overlap of competition between the subject imports and domestically produced silicon metal during the POI, the Commission should

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(II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,

(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,

(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices and are likely to increase demand for further imports,

(V) inventories of the subject merchandise,

(VI) 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,

…

(VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).

19 U.S.C. § 1677(7)(F)(i). To organize our analysis, we discuss the applicable statutory threat factors using the same volume/price/impact framework that applies to our material injury analysis. Statutory threat factors (I), (II), (III), (V), and (VI) are discussed in the analysis of subject import volume. Statutory threat factor (IV) is discussed in the analysis of subject import price effects. Statutory factors (VIII) and (IX) are discussed in the analysis of impact. Statutory factor (VII) concerning agricultural products is inapplicable to these investigations.

[255] 19 U.S.C. § 1677(7)(H).

[256] *See* 19 U.S.C. § 1677(7)(G)(ii), (7)(H).

[257] *See* 19 U.S.C. § 1677(7)(H); *see generally Cold-Rolled Steel Flat Products from Brazil, India, Korea, Russia, and the United Kingdom*, Inv. Nos. 701-TA-540, 542-544 and 731-TA-1283, 1285, 1287, and 1289-1290 (Final), USITC Pub. 4637 (Sept. 2016) at 24.

exercise its discretion and cumulate subject imports from Australia, Angola, Laos, Norway, and Thailand for purposes of threat.[258]

Respondent Simcoa argues that the Commission should exercise its discretion not to cumulate subject imports from Australia with subject imports from Angola, Laos, Norway and Thailand because subject imports from Australia are likely to compete under different conditions of competition.[259] Specifically, Simcoa argues it has long exported small quantities of the highest quality (purity) silicon metal to the U.S. market from halfway around the world, unlike producers in other subject countries.[260] No other Respondents addressed cumulation for purposes of threat in these preliminary phase investigations.

We previously found in Section VI.B. that the petitions for all investigations were filed on the same day and that there is a reasonable overlap of competition between and among subject imports from Australia, Laos, and Norway, and the domestic like product. There is no information on the record to suggest that the reasonable overlap of competition between and among imports from these subject sources and the domestic like product will not continue into the imminent future.

We also find that there will likely be a reasonable overlap of competition between and among subject imports from Angola and Thailand, subject imports from other sources, and the domestic like product.

Fungibility. With respect to fungibility, both U.S. producers reported that subject imports from Angola and Thailand were *** interchangeable with subject imports from each other source and the domestic like product.[261] Similarly, majorities of responding U.S. importers reported that subject imports from Angola were always or frequently interchangeable with subject imports from other sources and the domestic like product, while either half or majorities of responding U.S. importers reported that subject imports from Thailand were interchangeable in these same comparisons.[262]

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[258] Petitioners' Postconference Br. at 34-39.

[259] Simcoa Postconference Br. at 3, 45.

[260] Simcoa Postconference Br. at 45.

[261] CR/PR Table 2.9. Contrary to Simcoa's argument that certain factors limit the fungibility of subject imports from Australia, both domestic producers reported that subject imports from Australia were *** interchangeable with the domestic like product and subject imports from other sources, while a majority of responding importers reported that subject imports from Australia were always or frequently interchangeable with the domestic like product and subject imports from all sources but Thailand. *Id.* For subject imports from Thailand, importers were evenly divided between those reporting that they were always or frequently interchangeable with subject imports from Australia and those reporting that they were sometimes interchangeable with such imports. *Id.*

[262] CR/PR Table 2.10.

U.S. shipments of silicon metal from Angola and Thailand also shared a substantial degree of overlap with each other, subject imports from other sources, and the domestic like product in terms of grade in 2024. A majority of U.S. shipments of subject imports from Angola and Thailand were of metallurgical grade silicon metal, consistent with subject imports from Australia and Norway as well as the domestic like product.[263] Moreover, substantial percentages of U.S. shipments of subject imports from Angola and Thailand were of high purity grade silicon metal, consistent with the domestic like product and subject imports of Australia and Norway, while the majority of U.S. shipments of subject imports from Laos were of high purity grade with smaller percentages of U.S. shipments of subject imports from Laos being metallurgical grade silicon metal.[264] Thus, the record indicates that subject imports from all five sources and the domestic like product are generally fungible.

Channels of Distribution. The record also shows that subject imports from Angola and Thailand share overlapping channels of distribution with subject imports from Australia, Laos, and Thailand and the domestic like product. Subject imports from Angola were sold exclusively to distributors while subject imports from Thailand were sold in three of five channels of distribution during each year of the POI in varying proportions, including to distributors, secondary aluminum producers, and chemical producers.[265]

Geographic Overlap. Subject imports from Angola and Thailand were sold in all geographic markets of the contiguous United States alongside subject imports from each other country source and the domestic product.[266] Moreover, subject imports from Thailand entered the U.S. market through all four borders of entry, as was the case for subject imports from Australia, Laos, and Norway, while subject imports from Angola entered the U.S. market through the East border of entry.[267] Thus, the record indicates that subject imports from Angola and Thailand were sold in overlapping geographic regions of the United States with subject imports from Australia, Laos, and Norway, and the domestic like product.

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[263] CR/PR at Table 4.8.

[264] CR/PR at Table 4.8.

[265] CR/PR Table 2.4. The percentage of U.S. commercial shipments of subject imports from Thailand going to distributors ranged between *** percent and *** percent during the three calendar years of the POI. *Id*. The percentage of U.S. commercial shipments of subject imports from Thailand going to secondary aluminum producers ranged between *** percent and *** percent during the three calendar years of the POI. *Id*. The percentage of U.S. commercial shipments of subject imports from Thailand going to chemical producers ranged between *** percent and *** percent during the three calendar years of the POI. *Id*.

[266] CR/PR Table 2.5.

[267] CR/PR Table 4.9.

Simultaneous Presence in Market. During the 36-month POI, subject imports from Angola were present in the U.S. market for 6 months while subject imports from Thailand were present in the U.S. market for 30 months.[268] Although subject imports from Angola only first entered the U.S. market in June 2024, the increasing monthly volumes of such imports through March 2025 indicate that they are likely to be simultaneously present with subject imports from other sources and the domestic like product in the imminent future.

Based on the factors discussed above, we find that there was a reasonable overlap of competition between and among subject imports from all five countries and the domestic like product during the POI, and there is no information on the record indicating that this reasonable overlap will not continue into the imminent future. Nor do we find differences in likely conditions of competition with respect to any subject country or countries, including Angola and Thailand, sufficient to warrant considering such imports separately for purposes of our threat analysis. Accordingly, we exercise our discretion to cumulate subject imports from Angola, Australia, Laos, Norway, and Thailand for purposes of our analysis of whether there is a reasonable indication of a threat of material injury to the domestic industry by reason of subject imports from Angola and Thailand.

C. Analysis of Threat of Material Injury Factors

1. Nature of Alleged Countervailable Subsidies

Commerce initiated a countervailing duty investigation on silicon metal from Australia based on nine alleged subsidy programs.[269] Commerce also initiated a countervailing duty investigation on silicon metal from Laos based on 12 of 14 alleged subsidy programs.[270]

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[268] CR/PR at 4.22 & Table 4.10.

[269] *CVD Initiation Notice*, 90 Fed. Reg. at 21748-49, *citing* Commerce Initiation Checklist for Australia. The alleged subsidy programs on which Commerce initiated a countervailing duty investigation on silicon metal from Australia include the following: Research and Development (R&D) Tax Incentive, Policy Loans to the Critical Mining Industry Provided Through the Critical Minerals Strategy 2023-2030, Grants for Critical Mining Projects Provided Through the Critical Minerals Strategy 2023-2030, Powering the Regions Fund Grants, Exemption from Renewable Energy Target (RET) Program Liability, Payment under the Ancillary Service (Spinning Reserve) Scheme, Payments Under the Demand Side Management Scheme, Silicon Mining Rights for LTAR, and Provisions for Electricity for Less Than Adequate Remuneration Through the Critical Minerals Strategy 2023-2030. *Silicon Metal from Australia: Enforcement and Compliance Office III, AD/CVD Operations, Countervailing Duty Investigation Checklist* (May 14, 2025).

[270] *CVD Initiation Notice*, 90 Fed. Reg. at 21749, *citing* Commerce Initiation Checklist for Laos. The alleged subsidy programs on which Commerce initiated a countervailing duty investigation on silicon metal from Laos include the following: Income Tax Exemption for Specified Zones, Income Tax Exemptions, Import Duty and Value Added Tax (VAT) Exemptions on Imported Equipment in Encouraged (Continued…)

Commerce initiated a countervailing duty investigation on silicon metal from Norway based on 11 alleged subsidy programs.[271] Finally, Commerce initiated a countervailing duty investigation on silicon metal from Thailand based on 16 alleged subsidy programs.[272] The record has limited information on these countries' subsidy programs due to the preliminary nature of these investigations; we expect to have more information on these alleged subsidies in any final phase of the investigations.

2. Likely Volume

As discussed in section VII.C above, we have found that the volume of cumulated subject imports from Australia, Laos, and Norway was significant and increased significantly during the POI, in absolute terms and relative to U.S. consumption. Including subject imports

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Industries, Land Rental Fee Exemption in the Zone 2 Chanthabouly District of Vientiane Capital City, Rental and Concession Fee Exemptions in Zone 2 Chanthabouly District of Vientiane, Preferential Lending, Saysettha Development Zone Customs Duty and VAT Exemptions, Saysettha Development Zone Provision of Land Use Rights for LTAR, Saysettha Development Zone Land Rental Fee Exemption, Saysettha Development Zone VAT Reduction for Water Supply, and Saysettha Development Zone VAT Reductions for Electricity Supply. *Silicon Metal from Lao People's Democratic Republic: Enforcement and Compliance Office III, AD/CVD Operations, Countervailing Duty Investigation Checklist* (May 14, 2025).

[271] *CVD Initiation Notice*, 90 Fed. Reg. at 21749, *citing* Commerce Initiation Checklist for Norway. The alleged subsidy programs on which Commerce initiated a countervailing duty investigation on silicon metal from Norway include the following: Electricity Tax Exemption for Energy Intensive Industries, Export Credit Guarantees, Export Credit Financing Scheme (ERCFS), The Innovation Contracts Scheme, Innovation Projects for the Industrial Sector, Regional Investment Grant and Risk Loans, The Industrial Development Corporation of Norway, Regional Development Aid Scheme, Regional Transport Aid Scheme, Energy Subsidy Scheme, and CO2 Compensation Scheme. *Silicon Metal from Norway: Enforcement and Compliance Office III, AD/CVD Operations, Countervailing Duty Investigation Checklist* (May 14, 2025).

[272] *CVD Initiation Notice*, 90 Fed. Reg. at 21749, *citing* Commerce Initiation Checklist for Thailand. The alleged subsidy programs on which Commerce initiated a countervailing duty investigation on silicon metal from Thailand include the following: Investment Promotion Act Section 28 Exemption from Payment of Import Duties on, Machinery, Investment Promotion Act Section 30 Import Duty Reduction on Raw or Essential Materials Used in Promoted Production Activity, Investment Promotion Act Section 31 Income Tax Exemption on Net Profit from Promoted Activity, Investment Promotion Act Section 35 Income Tax Reductions and Rate Reductions in Special Locations and Zones, Investment Promotion Act Measures for Competitiveness Enhancement, Corporate Income Tax Exemptions and Reductions Under Measures to Promote Improvement of Production Efficiency, Import Duty Exemptions Under Measures to Promote Improvement of Production Efficiency, Corporate Income Tax Exemptions for BOI-Promoted Industrial Estates, Customs Act B.E. 2560 (2017) Section 29 Duty Drawback on Certain Raw Materials, Duty Reduction Privileges for Certain Exporters Tax Coupon for Exported Goods, EXIM Bank Export Buyer's Credit, EXIM Bank Export Revolving Credit, EXIM Bank Supplier Credit, EXIM Bank Medium- to Long-Term Loans, and Provision of Electricity for LTAR. *Silicon Metal from Thailand: Enforcement and Compliance Office III, AD/CVD Operations, Countervailing Duty Investigation Checklist* (May 14, 2025).

from Angola and Thailand, the volume of cumulated subject imports increased by 50.4 percent overall during the POI, declining from 28,418 short tons in 2022 to 19,045 short tons in 2023, before increasing to 42,733 short tons in 2024.[273] Including subject imports from Angola and Thailand, cumulated subject imports' share of apparent U.S. consumption increased overall by *** percentage points from 2022 to 2024, declining from *** percent in 2022 to *** percent in 2023, before increasing to *** percent in 2024.[274]

The record indicates that cumulated subject imports from all five countries are likely to increase from already significant levels, in absolute terms and relative to U.S. consumption, in the imminent future in the absence of relief. Responding subject producers cumulatively increased their capacity during the POI and possessed substantial excess capacity in 2024. During the 2022–2024 period, responding foreign producers in the five subject countries increased their capacity from *** short tons in 2022 to *** short tons in 2023 and 2024, while their production declined from *** short tons in 2022 to *** short tons in 2023 and *** short tons in 2024.[275] As a result, cumulated subject producers' capacity utilization declined substantially, from *** percent in 2022 to *** percent in 2023 and *** percent in 2024.[276] The cumulated subject producers' excess capacity amounted to *** short tons in 2024, equivalent to *** percent of apparent U.S. consumption that year.[277]

Cumulated subject producers from these five countries also possessed large and increasing end-of-period inventories with which they could increase their exports to the U.S. market. End-of-period inventories held by cumulated subject producers increased from *** short tons in 2022 to *** short tons in 2024, equivalent to *** percent of apparent U.S. consumption that year, and are projected to increase to *** short tons million pounds by 2026.[278]

Cumulated subject producers exported large volumes of silicon metal during the POI that accounted for more than *** percent of their total shipments,[279] and increasingly targeted

[273] CR/PR at Table C.1.

[274] CR/PR at Table C.1.

[275] CR/PR Table 7.8.

[276] CR/PR Table 7.8.

[277] Calculated from CR/PR Tables 7.8 and C.1. Cumulated subject producers' capacity is projected to be *** short tons in 2025 and 2026, their production is projected to be *** short tons in 2025 and *** short tons in 2026, and their capacity utilization is projected to be *** percent in 2025 and *** percent in 2026. CR/PR at Table 7.8.

[278] CR/PR Table 7.8; *Derived from* CR/PR at Tables C.1 & 7.8.

[279] CR/PR at Table 7.8. As a share of total shipments, cumulated subject producers' exports ranged from *** percent to *** percent during the POI. *Id*.

the U.S. market as an export destination.[280] Cumulated subject producers' total export shipments to the United States increased from *** short tons in 2022, accounting for *** percent of their total shipments, to *** short tons in 2024, accounting for *** percent of their total shipments.[281] Based on information from *** submitted by Petitioners, oversupply in the global market for silicon metal, coupled with ***, would likely create an incentive for subject producers to continue targeting the U.S. market with exports of silicon metal absent relief.[282]

In light of the significant increase in cumulated subject import volume and market share during the POI, the large and increasing capacity of the cumulated subject producers, including substantial excess capacity, the cumulated subject producers' large and growing inventories, and the cumulated subject producers' export orientation and increasing dependance on the U.S. market, we find that in the absence of relief, cumulated subject import volume is likely to increase significantly, in absolute terms and relative to U.S. consumption, in the imminent future.

3. Likely Price Effects

As discussed in Section VII.B.3 above, we have found that there is a high degree of substitutability between domestically produced silicon metal and subject imports, and that price is an important factor in purchasing decisions, among other important factors.

As discussed in Section VII.D above, we have found that subject imports from Australia, Laos, and Norway undersold the domestic like product to a significant degree in 2024, capturing *** percentage points of market share from the domestic industry and suppressing domestic prices to a significant degree. Including subject imports from Angola and Thailand, during the POI, cumulated subject imports undersold the domestic like product in 52.7 percent of quarterly comparisons, at margins ranging from *** to *** percent and averaging *** percent, corresponding to *** percent of reported cumulated subject import volume.[283] As with subject imports from Australia, Laos, and Norway, including subject imports from Angola and Thailand, cumulated subject import underselling intensified during the POI to become pervasive in

[280] CR/PR at Table 7.8. As a share of total shipments, cumulated foreign producers' exports to the U.S. market increased from *** percent in 2022 to *** percent in 2023. *Id*.

[281] CR/PR Table 7.8. There are no trade measures on silicon metal currently in place in other markets outside the United Sates. CR/PR at 7.27.

[282] *See* Pet. Postconference Br. at 22, Exhibit 1 at A-9, Exhibit 25; Petition Volume I at Exhibit I-22.

[283] CR/PR Table 5.9. Including subject imports from Angola and Thailand, there were *** short tons of subject silicon metal (*** percent of volume) in the quarters with underselling compared to *** short tons (*** percent of volume) in the quarters with overselling. *Id.* at Table 5.9 & *derived from* CR/PR at Table 5.9.

2024.[284] In 2024, cumulated subject imports undersold the domestic like product in 73.9 percent of price comparisons, corresponding to 66.3 percent of reported cumulated subject import sales volume.[285] Thus, cumulated subject imports significantly undersold the domestic like product in 2024, capturing *** percentage points of market share from the domestic industry from 2023 to 2024.[286]

In the absence of any evidence that the pattern of subject import underselling is likely to change, we find that cumulated subject imports are likely to continue to undersell the domestic like product to a significant degree in the imminent future. Given the high degree of substitutability between subject imports and the domestic like product and the importance of price to purchasers, we find that the significant subject import underselling that is likely would increase demand for further imports in the imminent future, thereby contributing to an additional shift in market share from the domestic industry to subject imports, and result in subject imports entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, as occurred during the 2023-2024 period when increasing volumes of low-priced subject imports suppressed domestic prices to a significant degree.

4. Likely Impact

As discussed in Section VII.E. above, based on the record in the preliminary phase of these investigations, we have found that significant and increasing volumes of low-priced cumulated subject imports from Australia, Laos, and Norway, captured market share from the domestic industry and suppressed domestic prices, thereby having a significant impact on the domestic industry. Given the reasonable indication that the domestic industry is materially injured by reason of subject imports from Australia, Laos, and Norway, the intensified adverse price effects of cumulated subject imports, including imports from Angola and Thailand, toward the end of the POI, and the industry's deteriorating performance over the POI, including financial *** in 2024, we find that the domestic industry is in a vulnerable condition.[287]

In light of the vulnerability of the domestic industry, and our findings that cumulated subject import volume is likely to increase further from already significant levels and continue

[284] CR/PR

[285] CR/PR at Revised Table 5.11. There were reported subject import sales of *** short tons in quarters with underselling, representing *** percent of total reported subject import sales volume in 2024, compared to reported subject import sales of *** short tons in the quarters with overselling, representing *** percent of total report subject import sales volume in 2024. *Id.*

[286] CR/PR at Table C.1.

[287] Notably, the domestic industry's operating income and net income were *** and ***, respectively, in 2024, and the ratios of those figures to net sales were *** percent and *** percent, respectively, that year.

to undersell the domestic like product, we conclude that cumulated subject imports would likely have a significant impact on the domestic industry in the imminent future, in the absence of relief. Specifically, the likely increased volumes of low-priced cumulated subject imports would likely depress or suppress domestic prices and displace sales of the domestic like product and cause the domestic industry to lose additional market share, adversely affecting the domestic industry's production, employment, revenues, and financial performance. *** responding U.S. producers reported anticipating negative effects from subject imports in the absence of relief.[288]

We have also considered whether factors other than subject imports threaten to injure the domestic industry. As discussed in Section VII.E. above, the market share of nonsubject imports declined overall from 2022 to 2024 and the AUVs of nonsubject imports were higher than those of cumulated subject imports in both 2023 and 2024, when the adverse price effects of subject imports intensified and the injury to the domestic industry occurred.[289] There is no information on the record that nonsubject imports would change the impact cumulated subject imports from all five countries are likely to have on the domestic industry in the imminent future.

Additionally, we have found that declining demand cannot fully explain the domestic industry's deteriorating condition during the POI since the domestic industry was unable to fully capitalize on the *** percent increase in apparent U.S. consumption from 2023 to 2024 as cumulated subject imports captured market share from the industry, driven by significant underselling, and suppressed domestic prices.[290] According to information from ***.[291] Given our conclusion that low-priced cumulated subject imports are likely to continue to increase and take market share from the domestic industry and depress or suppress domestic prices, we find that cumulated subject imports are likely to continue to have an impact on the industry that is distinct from the impact of any adverse demand trends.

In sum, based on the record of the preliminary phase of the investigations, we determine that there is a reasonable indication that an industry in the United States is threatened with material injury by reason of imports of silicon metal from Angola and Thailand.

IX. Conclusion

For the reasons stated above, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of silicon metal from

[288] CR/PR at Tables 6.14 & 6.15.
[289] CR/PR at Table C.1.
[290] CR/PR at Table C.1.
[291] Pet. Postconference Br. at 22; Petition Volume I at Exhibit I-22.

Australia, Laos, and Norway that are allegedly sold in the United States at LTFV and subsidized by the governments of Australia, Laos, and Norway. We also find that there is a reasonable indication that an industry in the United States is threatened with material injury by reason of imports of silicon metal from Angola that are allegedly sold in the United States at LTFV and imports of silicon metal from Thailand that are allegedly subsidized by the government of Thailand.

Part 1: Introduction

Background

These investigations result from a petition filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Ferroglobe USA, Inc. ('Ferroglobe"), Beverly, Ohio, and Mississippi Silicon LLC ("MS Silicon"), Burnsville, Mississippi, on April 24, 2025, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized imports from Australia, Laos, Norway, and Thailand and less-than-fair-value ("LTFV") imports of silicon metal[1] from Angola, Australia, Laos, and Norway. Table 1.1 presents information relating to the background of these investigations.[2] [3]

Table 1.1 Silicon metal: Information relating to the background and schedule of this proceeding

Effective date	Action
April 24, 2025	Petition filed with Commerce and the Commission; institution of the Commission investigations (90 FR 17978, April 30, 2025)
May 14, 2025	Commerce's notice of initiation (90 FR 21741 and 90 FR 21746, May 21, 2025)
May 15, 2025	Commission's conference
June 6, 2025	Commission's vote
June 9, 2025	Commission's determinations
June 16, 2025	Commission's views

[1] See the section entitled "The subject merchandise" in Part 1 of this report for a complete description of the merchandise subject in this proceeding.

[2] Pertinent Federal Register notices are referenced in appendix A and may be found at the Commission's website (www.usitc.gov).

[3] A list of witnesses appearing at the conference is presented in appendix B of this report.

Statutory criteria

Section 771(7)(B) of the Tariff Act of 1930 (the "Act") (19 U.S.C. § 1677(7)(B)) provides that in making its determinations of injury to an industry in the United States, the Commission--

> *shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.*

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--[4]

> *In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.. . .In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.*

[4] Amended by PL 114—27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

In addition, Section 771(7)(J) of the Act (19 U.S.C. § 1677(7)(J)) provides that—[5]

(J) EFFECT OF PROFITABILITY.—The Commission may not determine that there is no material injury or threat of material injury to an industry in the United States merely because that industry is profitable or because the performance of that industry has recently improved.

Organization of report

Part 1 of this report presents information on the subject merchandise, alleged subsidy rates and dumping margins, and domestic like product. Part 2 of this report presents information on conditions of competition and other relevant economic factors. Part 3 presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts 4 and 5 present the volume of subject imports and pricing of domestic and imported products, respectively. Part 6 presents information on the financial experience of U.S. producers. Part 7 presents the statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury as well as information regarding nonsubject countries.

Market summary

Silicon metal is composed almost exclusively of elemental silicon with a small amount of impurities such as iron, calcium, and aluminum. It is generally used as an alloying agent in aluminum production and by the chemical industry as an input in the production of silicones and polysilicon. Silicon metal is also used in a variety of applications, which include aluminum (auto/commercial), chemicals (silicones), and polysilicon (solar and electronics). The two U.S. producers of silicon metal are Ferroglobe and MS Silicon. Leading subject country producers of silicon metal outside the United States include *** of Angola , *** of Australia, *** of Laos,[6] *** of Norway, and *** of Thailand. The leading U.S. importer of silicon metal from Angola is ***, the leading importer of silicon metal from Australia is ***, the leading importer of silicon metal from Laos is ***, the leading importers of silicon metal from Norway are ***, the leading importers of silicon metal from Thailand are ***. The leading importer of silicon metal from nonsubject countries (primarily Brazil and Canada) include ***. U.S. purchasers of silicon metal are firms that include primary and secondary aluminum producers and silicon-based chemical producers. Leading purchasers include ***

[5] Amended by PL 114—27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.
[6] Petition p. 43

***.

Apparent U.S. consumption of silicon metal totaled approximately *** short tons contained silicon ("STCS") ($***) in 2024. Currently, two firms are known to produce silicon metal in the United States. U.S. producers' U.S. shipments of silicon metal totaled *** STCS ($***) in 2024, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled 42,733 STCS ($123 million) in 2024 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled 118,206 STCS ($355 million) in 2024 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, tables C.1. and C.2 The Commission's questionnaires collected data for the years 2022 to 2024. Except as noted, U.S. industry data are based on questionnaire responses of two firms that accounted for 100 percent of U.S. production of silicon metal during 2024.[7] U.S. imports are based on official import statistics[8] and on questionnaire responses from 11 U.S. importers.

[7] Conference transcript, p. 21 (Chaal).

[8] Official import statistics are based on General Imports using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, which measure the total physical arrivals of merchandise from foreign countries, whether such merchandise enters the U.S. customs territory immediately or is entered into bonded warehouses or free trade zones ("FTZs") under Customs custody.

Previous and related investigations

Silicon metal has been the subject of several prior import injury proceedings in the United States. The following tabulation presents information regarding previous antidumping and countervailing duty investigations. Table 1.2 presents the previous and related silicon metal proceedings and status of those orders.

Table 1.2 Silicon metal: Previous and related Commission proceedings and status of orders

Date	Number	Country	Determination	Current Status of Order
1990	731-TA-470	Argentina	Affirmative	Commerce revoked effective 1/1/2000 (66 FR 10669, 2/16/2001)
1990	731-TA-471	Brazil	Affirmative	Commerce revoked effective 2/16/06 (71 FR 76635, 12/21/2006)
1990	731-TA-472	China	Affirmative	Continuation of order effective 11/14/2023 (88 FR 80335, 11/17/2023)
2002	731-TA-991	Russia	Affirmative	Continuation of order effective 6/24/2020 (85 FR 37831, 6/24/2020)
2004	701-TA-441	Brazil	---	Petitions withdrawn on 4/16/2004 (69 FR 23213, 4/28/2004)
2004	731-TA-1081	South Africa	---	Petitions withdrawn on 4/16/2004 (69 FR 23213, 4/28/2004)
2017	731-TA-1343 and 701-TA-567	Australia	Negative (Commission)	---
2017	731-TA-1344 and 701-TA-568	Brazil	Negative (Commission)	---
2017	701-TA-569	Kazakhstan	Negative (Commission)	---
2017	731-TA-1345	Norway	Negative (Commission)	---
2020	701-TA-652	Kazakhstan	Affirmative	4/12/2021 (86 FR 20197, 4/16/2021)
2020	731-TA-1524	Bosnia and Herzegovina	Affirmative	4/12/2021 (86 FR 20197, 4/16/2021)
2020	731-TA-1525	Iceland	Affirmative	4/12/2021 (86 FR 20197, 4/16/2021)
2020	731-TA-1526	Malaysia	Affirmative	4/12/2021 (86 FR 20197, 4/16/2021)

Source: Silicon Metal from Australia, Brazil, Kazakhstan, and Norway (Final), USITC Publication 4773, April 2018; Silicon Metal from Bosnia and Herzegovina, Iceland, and Kazakhstan (Final); Silicon Metal From Russia, Investigation (Third Review), USITC Publication 5058, May 2020; and cited FR notices.

Nature and extent of alleged subsidies and sales at LTFV

Alleged subsidies

On May 21, 2025, Commerce published a notice in the Federal Register of the initiation of its countervailing duty investigation on silicon metal from Australia, Laos, Norway, and Thailand.[9]

Alleged sales at LTFV

On May 21, 2025, Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigations on silicon metal from Angola, Australia, Laos, and Norway.[10] Commerce has initiated antidumping duty investigations based on estimated dumping margins of 207.28 percent for silicon metal from Angola, 328.89 percent for silicon metal from Australia, 231.63 percent for silicon metal from Laos, and 102.08 percent for silicon metal from Norway.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[11]

> *The scope of these investigations covers all forms and sizes of silicon metal, including silicon metal powder. Silicon metal contains at least 85.00 percent but less than 99.99 percent silicon, and less than 4.00 percent iron, by actual weight. Semiconductor grade silicon (merchandise containing at least 99.99 percent silicon by actual weight and classifiable under Harmonized Tariff Schedule of the United States (HTSUS) subheading 2804.61.0000) is excluded from the scope of these investigations.*

[9] For further information on the alleged subsidy programs see Commerce's notice of initiation and related CVD Initiation Checklist. 90 FR 21746, May 21, 2025.

[10] 90 FR 21741, May 21, 2025.

[11] 90 FR 21741, May 21, 2025.

Tariff treatment

Silicon metal is currently provided for in Harmonized Tariff Schedule of the United States ("HTS") subheading 2804.69.10 (covering shipments of silicon containing, by weight, less than 99.99 percent silicon but not less than 99 percent silicon) and 2804.69.50 (for other silicon containing, by weight, less than 99 percent silicon). Semiconductor-grade silicon (containing, by weight, not less than 99.99 percent silicon) is imported under HTS subheading 2804.61.00 and is excluded from the scope of these investigations. The general rate of duty is 5.3 percent ad valorem for HTS subheading 2804.69.10 and 5.5 percent ad valorem for HTS subheading 2804.69.50.[12] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Effective April 5, 2025, silicon metal originating in Angola, Australia, Laos, Norway, and Thailand were subject to an additional 10 percent ad valorem reciprocal duty under the International Emergency Economic Powers Act ("IEEPA"). Effective April 9, 2025, Angola was instead assigned an individualized country reciprocal duty of 32 percent ad valorem, Laos was instead assigned an individualized country reciprocal duty of 48 percent ad valorem, Norway was instead assigned an individualized country reciprocal duty of 15 percent ad valorem, and Thailand was instead assigned an individualized country reciprocal duty of 36 percent ad valorem. However, effective April 10, 2025, individualized country reciprocal duties were suspended and the reciprocal duty rate for silicon metal originating in Angola, Laos, Norway, and Thailand was returned to 10 percent.[13] On May 28, 2025, the U.S. Court of International Trade ("CIT") ruled that the tariffs imposed under IEEPA exceeded the authority granted by the statute to the President, and stated that the tariff orders would be vacated and their operation permanently enjoined.[14] On May 29, 2025, the U.S. Court of Appeals for the Federal Circuit granted an immediate administrative stay, temporarily staying the judgment and permanent injunction entered by the CIT until further notice while the Federal Circuit considers the Government's motion to stay the judgment and injunction pending its appeal on the merits.[15]

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[12] USITC, HTS (2025) Revision 13, Publication 5627, May 2025, p. 28.4.

[13] Individualized country reciprocal duties for all countries other than China were suspended until July 9, 2025. 90 FR 15041, April 7, 2025. 90 FR 15625, April 15, 2025. See also HTS headings 9903.01.25, 9903.01.46, 9903.01.61, 9903.01.65, and 9903.01.74 and U.S. note 2(v) to subchapter 3 of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 13, Publication 5627, May 2025, pp. 99.3.1 to 99.3.10, 99.3.278, 99.3.306 to 99.3.309.

[14] *V.O.S. Selections, Inc. v. United States*, Slip Op. 25—66 (Ct. Int'l Trade May 28, 2025).

[15] *V.O.S. Selections, Inc. v. United States,* Appeal Nos. 2025—1812, 2025—1813 (Fed. Circuit May 29, 2025) (per curiam).

The product

Description and applications[16]

Silicon is a light chemical element with metallic and nonmetallic characteristics. It is a semiconductor, meaning it is a poor conductor of electricity under certain conditions (e.g., silicon metal at room temperature), but can be highly conductive under the right conditions (e.g., silicon metal at higher temperatures). Silicon is rarely found free in nature, instead it combines with oxygen and other elements to form various compounds or minerals known as silicates, which comprise more than 25 percent of the Earth's crust. A basic building block of silicates is silica (quartz or quartzite)[17] and its carbothermic reduction produces both silicon and silicon-rich alloys such as ferrosilicon. Ferrosilicon is used in the iron and steel industries, while silicon metal (also produced from quartz) is primarily used by the aluminum and chemical industries.[18]

Silicon metal is named as such because of its appearance; it is not a metal but a metalloid by chemical classification.[19] It is composed almost entirely of elemental silicon, along with small amounts of other elements, such as iron, aluminum, and calcium. It is manufactured and sold in various degrees of purity. Whether domestic or imported, it is usually sold in lump form, typically ranging from 6 inches x ½ inch to 4 inches x ¼ inch, or in powder form.[20] ***.[21]

Silicon metal is principally used as an alloying agent in aluminum production by the aluminum industry, as an input in the production of silicones, and to produce polycrystalline silicon ("polysilicon").[22] As an alloying agent, silicon metal is used in the production of both primary aluminum (produced from ore) and secondary aluminum (produced from scrap). Silicon

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[16] Unless otherwise noted, this information is based on Bosnia and Herzegovina, Iceland, and Kazakhstan, (Final), USITC Publication 5180, April 2021, pp. 1.10 to 1.14.

[17] Quartz is the mineral form of silicon dioxide (SiO_2) and quartzite is a massive, metamorphic rock consisting predominantly of quartz along with small amounts of other minerals.

[18] USGS, Mineral Commodity Summaries, Silicon, January 2025, p. 160, https://pubs.usgs.gov/periodicals/mcs2025/mcs2025-silicon.pdf, retrieved May 14, 2025.

[19] Di Sabatino et al., Upgraded Metallurgical Grade Silicon: Quality, Applications, and Process Economics, February 10, 2025, p. 1, https://doi.org/10.3389/fphot.2025.1544237, retrieved May 14, 2025.

[20] These dimensions refer to the maximum and minimum sizes of the silicon metal lumps.

[21] Petitioners' post-conference brief, p. 22.

[22] Subject silicon metal can be further processed into ultra-high-purity semiconductor or solar grades whose silicon content is 99.99 percent or greater. Semiconductor-grade silicon metal is not included within the scope of these investigations. However, the subject silicon metal may be used as a starting material for the manufacture of semiconductor-grade silicon metal.

is a necessary ingredient in aluminum casting alloys, where it improves fluidity, castability, strength, and weldability when added to aluminum.[23] Aluminum producers add silicon in lump form to aluminum during the smelting process. Primary aluminum typically contains between 8-12 percent silicon while secondary aluminum typically has less silicon content. Both are frequently used for automobile parts. Other applications for silicon metal include the production of brass and bronzes, die casting, steel, copper alloys, ceramic powders, and refractory coatings.

Chemical manufacturers consume silicon metal in powder form to produce silicones and polysilicon. The chemical manufacturers that have their own grinding facilities purchase silicon metal in lump form and grind it into powder themselves. Firms that do not have grinding facilities purchase silicon metal as a powder.[24] A lower grade of powder called fines, a byproduct of the crushing and sizing process, is sold for ceramic and refractory applications. In the chemical industry, silicon metal is used as the basis for the production of silanes, which are used to produce a family of organic compounds known as silicones. Silicones are used for a variety of applications, including adhesives, resins, lubricants, plastomers, anti-foaming agents, and water-repellent compounds.[25]

Silicon metal is used as the base material for making polysilicon, a very high-purity form of silicon manufactured by chemical producers that is primarily used in semiconductors and solar cells.[26] Polysilicon producers purchase in-scope silicon metal and then further refine it into higher-purity polysilicon that is not in the scope of these investigations. Polysilicon producers typically have very stringent quality standards for silicon and sometimes require low-boron silicon metal.

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[23] Many aluminum alloys are used by the transportation sector as a substitute for heavier metals to reduce weight and improve the efficiency of vehicles and aircraft.

[24] Size consistency is important to chemical producers that purchase silicon metal in powder form. Suppliers to such customers must qualify their product before bidding to supply the chemical manufacturer. For that reason, there is no difference in terms of size consistency between qualified imports and domestic products.

[25] The silicones production process involves reacting silicon metal with methyl chloride in the presence of a copper catalyst to produce a mixture of methylchlorosilanes. Certain of these silanes are then hydrolyzed to produce the basic methylsilicone building block for the various silicone products.

[26] Polysilicon, which is not within the scope of these investigations, generally contains over 99.999 percent silicon and is made by reacting high purity metallurgical silicon with hydrogen chloride gas in the presence of catalysts, producing silicon tetrachloride, which is then purified by fractional distillation. The purified distillate is pyrolytically decomposed to produce hyper pure metal and hydrochloric acid.

Silicon metal can be grouped as ranges of specifications that are typically sold to certain types of customers.[27] These specifications establish the minimum amounts of silicon and the maximum amounts of other elements, such as boron, iron, calcium, and aluminum that the silicon metal may contain. The ranges of specifications vary depending on the type of end use of the silicon metal. There are five general end uses using five broadly defined categories of silicon metal, generally ranked in descending order of purity as: (1) semiconductor;[28] (2) solar;[29] (3) chemical (or silicones); (4) metallurgical used to produce primary aluminum; and (5) metallurgical used to produce secondary aluminum.[30] Exact specifications may vary by producer and over time, but U.S. producer Ferroglobe has previously listed its silicon metal product specifications as:

- High purity specification: silicon 98.50 percent minimum, iron 0.10 percent maximum, calcium 0.07 percent maximum, aluminum 0.20 percent maximum.
- Chemical specification: silicon 98.50 percent minimum, iron 0.50 percent maximum, calcium 0.07 percent maximum, aluminum 0.20 percent maximum.
- Primary aluminum specification: silicon 98.50 percent minimum, iron 0.35 percent maximum, calcium 0.07 percent maximum.
- Secondary aluminum specification: silicon 98.50 percent minimum, iron 1.00 percent maximum, calcium 0.40 percent maximum.

Silicon specifications can be customer specific as some customers, such as certain polysilicon producers, require higher grades of silicon than the ones listed by Ferroglobe. Some chemical and polysilicon producers require suppliers to go through a qualification process and

[27] Some suppliers, customers, and publications refer to numerical grade designations such as "Grade 553." "Grade 553" is silicon metal with a maximum iron content of 0.5 percent, a maximum aluminum content of 0.5 percent, and a maximum calcium content of 0.3 percent. Such silicon metal normally has a minimum silicon content of 98.5 percent.

[28] Semiconductor grade silicon, or polysilicon, used in the electronics industry, is excluded from the scope of these investigations. It is a high-purity product generally containing over 99.99 percent silicon.

[29] Solar grade silicon can either be made either through the traditional chemical or Siemens processes that are used to make semiconductor grade silicon, or via a metallurgical route that makes upgraded metallurgical grade silicon of a higher purity than 99.99 percent. Di Sabatino et al., Upgraded Metallurgical Grade Silicon: Quality, Applications, and Process Economics, February 10, 2025, p. 2, https://doi.org/10.3389/fphot.2025.1544237, retrieved May 14, 2025; Forniés et al., Performance of Modules and Solar Cells Made of 100% Solar Silicon Purified by Direct Route, 2018, pp. 473–475, https://doi.org/10.4229/35THEUPVSEC20182018-2AV.1.5, retrieved May 14, 2025.

[30] Aluminum is not considered an impurity when silicon is used to dissolve into molten aluminum, and thus is not reported in the specifications by this industry. Di Sabatino et al., Upgraded Metallurgical Grade Silicon: Quality, Applications, and Process Economics, February 10, 2025, p. 2, https://doi.org/10.3389/fphot.2025.1544237, retrieved May 14, 2025.

undergo subsequent monitoring of their manufacturing facilities to ensure that their products are consistent in both size and grade.

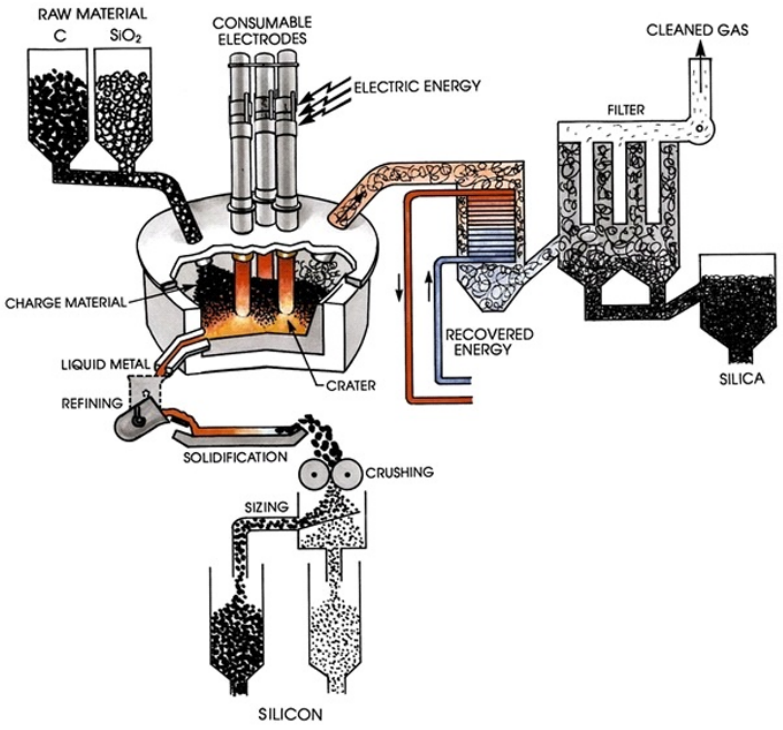
Manufacturing processes[31]

Generally, all silicon metal, regardless of specification, is produced using essentially the same process and inputs. Silica, in the form of high-purity quartz, is combined in a "charge" with a carbon source such as low-ash coal, charcoal, or petroleum coke; and a bulking agent, usually wood chips produced from hardwood trees.[32] The charge is placed in a submerged electric-arc furnace. A transformer system delivers high-current, low-voltage electricity to the furnace by electrodes made from pre-baked or self-baking amorphous carbon. The electrodes are slowly consumed during the production process. The charge is heated to approximately 3,000 degrees Fahrenheit, at which point the oxygen in the silica separates from the silicon and combines with the carbon in the reductant to form carbon monoxide gas. The simplified chemical reaction is summarized as SiO_2 (silica) + 2C (carbon) → Si (silicon metal) + 2CO (carbon monoxide). This reaction requires a substantial amount of electricity, giving the transformation process its name of "electrometallurgy". The off-gas (primarily carbon dioxide and silicon dioxide) escapes from the furnace and into a baghouse for collection, leaving molten silicon. The liquid silicon is removed or "tapped" from the bottom of the furnace on either a continuous or an intermittent basis and collected in a refractory lined ladle. In the molten state, the silicon metal is often refined by oxygen injection to remove impurities, principally aluminum and calcium. Some impurities cannot be removed from the liquid silicon and, therefore, must be controlled by raw material selection. After tapping (or refining), the silicon metal is poured from the ladle into large, flat iron molds or onto beds of silicon metal fines. The resulting ingot or billet is subsequently crushed to the desired size specification. It can be further ground into powder for some customers in the chemicals industry. The silicon is typically delivered to end users in 2,000 to 3,000-pound super sacks, wooden boxes, or customer-specific packaging. Some customers elect to send their own trucks to the plant to transport the silicon in bulk form. Figure 1.1 depicts the silicon metal production process (through tapping of molten silicon).

[31] Unless otherwise noted, this information is based on Silicon Metal from Bosnia and Herzegovina, Iceland, and Kazakhstan, (Final), USITC Publication 5180, April 2021, pp. 1.14 to 1.16.

[32] Producers in the United States tend to use low-ash coal from Kentucky as it is cheaper than other carbon sources, whereas producers in most other countries do not have ready access to low-ash coal and instead use charcoal. Conference transcript, p. 55 (Lage).

Figure 1.1
Silicon metal: Production process



Source: Xakalashe, B.S. and M. Tangsted, "Silicon Processing: From Quartz to Crystalline Silicon Solar Cells" Southern African Prometallurgy 2011, Southern African Institute of Mining and Metallurgy, Johannesburg, March 2011, p. 88.

Silica fume (microsilica) is composed of small particles of unreduced silicon dioxide recovered from the off-gases of silicon metal furnaces and is an important by-product of silicon metal production. Silica fume is used in making concrete, oil well grouts, cementitious repair products, refractories and ceramics, and other products.

Silicon metal plants are typically located at sites that have access to a competitively priced and reliable source of electricity, an ample supply of raw materials, and an adequate labor pool. Given the large amounts of quartz required to produce silicon metal, plants are normally located near quartz sources. Silicon plants typically operate furnaces 24 hours per day, 7 days per week, to maximize efficiency, so they constantly consume raw materials.

Submerged arc furnaces used for silicon production are relatively similar worldwide, but there are some physical differences in furnace designs and the electrodes. In some cases, newer furnaces are more energy efficient. Reportedly, Ferroglobe requires about 13,000 to 14,000 kilowatt hours ("kwh") of electricity to produce one short ton of silicon metal, but some plants with newer furnaces, like Mississippi Silicon, can produce the same quantity of silicon metal using only 9,500 to 10,000 kwh of electricity. To control the amount of impurities such as phosphorous and boron, which have maximum allowable amounts depending on the end use of

the silicon metal, a smelter may need to use different inputs.[33] Purities of the raw materials and the carbon sources used can vary widely. Some producers of silicon metal also produce ferrosilicon, which is used in the production of steel (especially stainless and heat-resisting steels) and cast iron.[34] Ferrosilicon can be produced at lower temperatures than silicon because of the iron, resulting in less power consumption to produce ferrosilicon than silicon.

Producers can switch production on a furnace between ferrosilicon and silicon metal with varying degrees of downtime and efficiency loss. It can be labor intensive and expensive as it requires a lengthy cleaning process and, in some cases, changes to the electrode system.[35] It is generally easier for firms to switch from silicon metal production to ferrosilicon production than the reverse. Iron and other elements that may be contained in ferrosilicon tend to remain in a furnace lining and result in impurities intolerable in silicon metal production. In addition, certain furnace designs are more efficient at producing one product than another, leading to possible efficiency loss when switching production.

[33] Conference transcript, p. 137, (Majumdar); Elkhems' postconference brief, ex. 1, p. 10.

[34] Ferrosilicon is a product used by the steel industry as an alloying agent. Ferrosilicon differs from silicon metal in that it has much lower silicon content and contains 4 percent or more of iron.

[35] Conference transcript, p. 88, (Bay).

Domestic like product issues

No issues with respect to domestic like product have been raised in these investigations. The petitioners proposed that the Commission define a single domestic like product that is coextensive with the scope of the investigations consisting of all silicon metal, which they assert is consistent with the domestic like product definition adopted by the Commission in its recent investigations involving silicon metal.[36] No respondents have contested the domestic like product definition during these investigations.[37]

[36] Petitioners' postconference brief, pp. 7 to 8

[37] Petitioners' postconference brief, p. 8 and Conference transcript p. 118 (Stoel)

Part 2: Conditions of competition in the U.S. market

U.S. market characteristics

*** U.S. producers reported that the market is not subject to distinctive conditions of competition. U.S. *** reported that demand for silicon metals is tied to the demand for downstream products as aluminum alloys, silicon-based chemicals, and polysilicon. Importers' responses to whether the silicon metals market is subject to distinct conditions of competition varied, with 6 out of 10 importers reporting distinct conditions of competition. Importers *** and *** reported that fluctuations in silicon metal supplies lead to spot price fluctuations. Importer *** reported that "U.S. demand for silicon metal between 2022-2024 far exceeds the supply (and available capacity)" and that "artificial curtailment of supply," such as when U.S. producers choose to produce ferrosilicon instead of silicon metal as profit margins change, affect U.S. market conditions. Importer *** reported that Brazil and Canada are leading sources of imported silicon metal and added that one of the four producers in Brazil "is owned by the majority owner of MS Silicon," and the "only silicon plant in Canada…. is majority owned by Ferroglobe."

Overall, apparent U.S. consumption in 2024 was lower than in 2022, with consumption falling by *** percent between January 2022 to December 2024.

Impact of section 301 tariffs,232 tariffs, and new or modified tariffs

U.S. producers and importers were asked to report the impact of section 301 tariffs, section 232 tariffs, and new or modified tariffs stemming from recent executive orders on overall demand, supply, prices, or raw material costs (tables 2.1, 2.2, and 2.3). Regarding section 301 tariffs, importer *** and importer *** reported that the market had already adjusted due to preexisting duties affecting silicon metals from China. Regarding 232 tariffs on steel and aluminum products, importer *** reported that it expects U.S. production of aluminum to increase, and thus the demand for silicon metals from U.S. producers to increase accordingly. Regarding new or modified tariffs stemming from executive orders since January 1, 2025, importers ***, ***, and *** anticipate effects on the supply of imported silicon metals, while U.S. producer ***.

Table 2.1 Silicon metal: Count of firms' responses regarding the impact of the section 301 tariffs on Chinese origin products

Firm type	No	Yes	Don't know
U.S. producers	***	***	***
Importers	0	7	4

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

Table 2.2 Silicon metal: Count of firms' responses regarding the impact of the section 232 tariffs on steel and aluminum imports

Firm type	No	Yes	Don't know
U.S. producers	***	***	***
Importers	4	1	6

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

Table 2.3 Silicon metal: Count of firms' responses regarding the impact of new or modified tariffs

Firm type	No	Yes	Don't know
U.S. producers	***	***	***
Importers	4	3	4

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

Channels of distribution

U.S. producers sold *** chemical producers, as shown in table 2.4. The primary channels of distribution for silicon metal imports from Australia have varied over the period of investigation, with *** being the primary channel of distribution up until 2024, when the share of shipments to *** approximated those to ***. Most imports of silicon metals from Laos were to ***. Silicon metals imported from Norway have varied channels of distribution, with shipments reported to all channels of distribution except ***. Silicon metals imported from Thailand are shipped to ***. Nonsubject sources are shipped primarily to chemical producers.

Table 2.4 Silicon metal: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent

Source	Channel	2022	2023	2024
United States	Distributors	***	***	***
United States	Chemical producers	***	***	***
United States	Primary aluminum producers	***	***	***
United States	Secondary aluminum producers	***	***	***
United States	Other end users	***	***	***
Angola	Distributors	***	***	***
Angola	Chemical producers	***	***	***
Angola	Primary aluminum producers	***	***	***
Angola	Secondary aluminum producers	***	***	***
Angola	Other end users	***	***	***
Australia	Distributors	***	***	***
Australia	Chemical producers	***	***	***
Australia	Primary aluminum producers	***	***	***
Australia	Secondary aluminum producers	***	***	***
Australia	Other end users	***	***	***
Laos	Distributors	***	***	***
Laos	Chemical producers	***	***	***
Laos	Primary aluminum producers	***	***	***
Laos	Secondary aluminum producers	***	***	***
Laos	Other end users	***	***	***
Norway	Distributors	***	***	***
Norway	Chemical producers	***	***	***
Norway	Primary aluminum producers	***	***	***
Norway	Secondary aluminum producers	***	***	***
Norway	Other end users	***	***	***
Thailand	Distributors	***	***	***
Thailand	Chemical producers	***	***	***
Thailand	Primary aluminum producers	***	***	***
Thailand	Secondary aluminum producers	***	***	***
Thailand	Other end users	***	***	***

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

Table 2.4 (Contined) Silicon metal: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent

Source	Channel	2022	2023	2024
Subject sources	Distributors	***	***	***
Subject sources	Chemical producers	***	***	***
Subject sources	Primary aluminum producers	***	***	***
Subject sources	Secondary aluminum producers	***	***	***
Subject sources	Other end users	***	***	***
Subject sources less Angola and Thailand	Distributors	***	***	***
Subject sources less Angola and Thailand	Chemical producers	***	***	***
Subject sources less Angola and Thailand	Primary aluminum producers	***	***	***
Subject sources less Angola and Thailand	Secondary aluminum producers	***	***	***
Subject sources less Angola and Thailand	Other end users	***	***	***
Nonsubject sources	Distributors	***	***	***
Nonsubject sources	Chemical producers	***	***	***
Nonsubject sources	Primary aluminum producers	***	***	***
Nonsubject sources	Secondary aluminum producers	***	***	***
Nonsubject sources	Other end users	***	***	***
Nonsubject sources plus Angola and Thailand	Distributors	***	***	***
Nonsubject sources plus Angola and Thailand	Chemical producers	***	***	***
Nonsubject sources plus Angola and Thailand	Primary aluminum producers	***	***	***
Nonsubject sources plus Angola and Thailand	Secondary aluminum producers	***	***	***
Nonsubject sources plus Angola and Thailand	Other end users	***	***	***
All import sources	Distributors	***	***	***
All import sources	Chemical producers	***	***	***
All import sources	Primary aluminum producers	***	***	***
All import sources	Secondary aluminum producers	***	***	***
All import sources	Other end users	***	***	***

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

Geographic distribution

U.S. producers and importers reported selling silicon metal to all regions of United States (table 2.5). For U.S. producers, *** percent of sales were within 100 miles of their production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table 2.5 Silicon metal: Count of U.S. producers' and U.S. importers' geographic markets

Region	U.S. producers	Angola	Australia	Laos	Norway	Thailand	Subject sources
Northeast	***	***	2	2	***	***	4
Midwest	***	***	3	2	***	***	4
Southeast	***	***	2	2	***	***	4
Central Southwest	***	***	1	1	***	***	3
Mountain	***	***	1	1	***	***	1
Pacific Coast	***	***	2	1	***	***	3
Other	***	***	1	1	***	***	1
All regions (except Other)	***	***	1	1	***	***	1
Reporting firms	2	1	3	3	2	2	5

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

Note: Other U.S. markets include Alaska, Hawaii, Puerto Rico, and the Virgin Islands.

Supply and demand considerations

U.S. supply

Table 2.6 provides a summary of the supply factors regarding silicon metal from U.S. producers and from subject countries. From information submitted to the Commission regarding foreign producers, capacity utilization for subject countries decreased from 2022 to 2024, with producers from *** reporting the greatest change in capacity utilization. Foreign producers' inventories to total shipments *** from 2022 to 2024, except in the case of producers from ***, which reported an increased ratio of inventories to total shipments. U.S. producers' capacity utilization *** from 2022 to 2024.

Table 2.6 Silicon metal: Supply factors that affect the ability to increase shipments to the U.S. market, by country

Quantity in short tons contained silicon; ratio and share in percent

Factor	Measure	United States	Angola	Australia	Laos	Norway	Thailand	Subject suppliers	Subject suppliers less Angola and Thailand
Capacity 2022	Quantity	***	***	***	***	***	***	***	***
Capacity 2024	Quantity	***	***	***	***	***	***	***	***
Capacity utilization 2022	Ratio	***	***	***	***	***	***	***	***
Capacity utilization 2024	Ratio	***	***	***	***	***	***	***	***
Inventories to total shipments 2022	Ratio	***	***	***	***	***	***	***	***
Inventories to total shipments 2024	Ratio	***	***	***	***	***	***	***	***
Home market shipments 2024	Share	***	***	***	***	***	***	***	***
Non-US export market shipments 2024	Share	***	***	***	***	***	***	***	***
Ability to shift production	Count	***	***	***	***	***	***	***	***

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

Note: Responding U.S. producers accounted for all of U.S. production of silicon metal in 2024. Responding foreign producer/exporter firms accounted for all or virtually U.S. imports of silicon metal from Australia, Norway, and Thailand during 2024. No foreign producer or exporter from Angola or Laos provided responses. 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 Parts 3 and 7.

Domestic production

Based on available information, U.S. producers of silicon metal have the ability to respond to changes in demand with moderate changes in the quantity of shipments of U.S.-produced silicon metal to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of some unused capacity, inventories, and some ability to shift production to or from alternate products. Factors mitigating responsiveness of supply include the limited ability to shift shipments from alternate markets.

U.S. producers reported decreasing production and production capacity from 2022 to 2024. Production decreased less than production capacity leading to an increase in capacity utilization over the same period. Inventories remained relatively constant as a ratio to total shipments from 2022 to 2024. U.S. producers reported that commercial shipments to countries other than the United States remained *** percent throughout the period. *** of two U.S. producers reported that *** able to produce other products on the same equipment used to produce silicon metal. U.S. producer *** reported that it ***. U.S. producer *** reported that *** ability to shift production to or from other products.

Subject imports from Angola

The Commission did not receive any questionnaire responses from producers in Angola.

Subject imports from Australia

Based on available information, producers of silicon metal from Australia have the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of silicon metal to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of some unused capacity, ability to shift shipments from alternate markets or inventories. Factors mitigating responsiveness of supply include a limited ability to shift production to or from alternate products

The responding Australian producer's production capacity remained constant from 2022 to 2024, while production and capacity utilization decreased throughout the period. Inventories as a ratio to total shipments increased from approximately *** percent in 2022 to more than

*** percent in 2024. Australian producers reported that *** of shipments were to non-U.S. markets in 2024.

Subject imports from Laos

The Commission did not receive any questionnaire responses from producers in Laos.

Subject imports from Norway

Based on available information, producers of silicon metal from Norway have the ability to respond to changes in demand with large changes in the quantity of shipments of silicon metal to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, ability to shift shipments from alternate markets.

Responding Norwegian producers' production capacity remained constant from 2022 to 2024 while production and capacity utilization decreased throughout the period. Inventories as a ratio to total shipments remained constant at just over *** percent. Norwegian producers reported that *** of shipments were to non-U.S. markets in 2024.

Subject imports from Thailand

Based on available information, producers of silicon metal from Thailand have the ability to respond to changes in demand with large changes in the quantity of shipments of silicon metal to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the availability of unused capacity.

Responding Thai producers' production capacity increased from 2022 to 2024 while production decreased substantially, leading to a large increase in unused capacity throughout the period. Inventories decreased by approximately *** percentage points over the period. Thai producers reported that less than *** percent of shipments were to non-U.S. markets in 2024.

Imports from nonsubject sources

Nonsubject imports accounted for 73.4 percent of total U.S. imports in 2024. The largest sources of nonsubject imports from January 2022 to December 2024 were Brazil and Canada. Combined, these countries accounted for 63.6 percent of all imports in 2024.

Supply constraints

*** U.S. producers and all responding importers reported that they had not experienced supply constraints since January 1, 2022.

U.S. demand

Based on available information, the overall demand for silicon metal is likely to experience relatively small changes in response to changes in price. Demand for the end-use products is the underlying driver of demand for silicon metal. While silicon metal accounts for a varying share of the total cost of its end-use products, demand responsiveness is constrained by the lack of substitute products.

End uses and cost share

Silicon metal is primarily used by chemical producers in the production of silicones and polysilicon, and by aluminum producers as an alloying agent. Chemical end uses identified by firms include silicones, silicone tetrachloride, chlorosilanes, trichlorosilane, hyperpure polysilicon, polycrystalline silicon, polysilicon, sealants, and silicone adhesive sealants. Aluminum end uses include aluminum alloys, wrought aluminum alloys, aluminum castings, and various foundry ingots. Firms also reported end uses in ceramics and refractories.

Silicon metal usually accounts for a moderate-to-large share of the cost of the end-use products in which it is used. Reported cost shares for chemical producers ranged from 20 percent to 59 percent of total cost, and polysilicon producers reported silicon metal cost shares between 20 and 100 percent. Reported cost shares for primary and secondary aluminum applications were between 1 and 10 percent.

Business cycles

*** U.S. producer reported that the market is subject to business cycles, while 6 out of 10 importers indicated that the market is subject to business cycles. Specifically, importer *** reported that demand from aluminum customers “tends to fluctuate both during the year and across years”, importer *** reported that silicon metal demand is “subject to overall silicones demand, as well as demand from the aluminum industry and polysilicon (industry)”, and importer *** reporting that demand follows market cycles.

Demand trends

Most firms reported an increase in U.S. demand for silicon metal since January 1, 2022 (table 2.7).

Table 2.7 Silicon metal: Count of firms' responses regarding overall domestic and foreign demand, by firm type

Market	Firm type	Steadily Increase	Fluctuate upward	No change	Fluctuate downward	Steadily decrease
Domestic demand	U.S. producers	***	***	***	***	***
Domestic demand	Importers	1	5	0	2	0
Foreign demand	U.S. producers	***	***	***	***	***
Foreign demand	Importers	4	2	1	1	0

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

Substitute products

Substitutes for silicon metal are limited. *** U.S. producers and 10 out of 11 importers reported that there were no substitutes.

Substitutability issues

This section assesses the degree to which U.S.-produced silicon metal and imports of silicon metal from subject countries can be substituted for one another by examining the importance of certain purchasing factors and the comparability of silicon metal from domestic and imported sources based on those factors. The degree of substitution between domestic and imported silicon metal depends upon such factors as grade, sizing and packaging, reliability of supply, timeliness of delivery, and conditions of sale. Based on available data, staff believes that there is a high degree of substitutability between domestically produced silicon metal and silicon metal imported from subject sources, although silicon metal chemical composition characteristics (see description of importer responses for table 2.10 below) and reliability of supply issues may affect levels of substitutability.[1]

[1] The degree of substitution between domestic and imported silicon metal depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced silicon metal to the silicon metal imported from subject countries (or vice versa) when prices change. The degree of substitution may include such factors as quality differences (e.g., grade standards, defect rates, etc.), and differences in sales conditions (e.g., lead times between order and delivery dates, reliability of supply, product services, etc.).

Factors affecting purchasing decisions

Most important purchase factors

Purchasers responding to lost sales lost revenue allegations[2] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for silicon metal. The most often cited top three factors that firms considered in their purchasing decisions for silicon metal were quality (18 firms), price (12 firms), and availability and supply (11 firms) as shown in table 2.8. Quality was the most frequently cited first-most important factor (cited by 10 firms), followed by price (4 firms); quality was the most frequently reported second-most important factor (6 firms); and availability and supply was the most frequently reported third-most important factor (6 firms). Other factors included customer approvals, service, packaging, payment terms, and sustainability. Purchaser *** reported that the firm prioritizes *** and that silicon metal from nonsubject source Brazil is produced with renewable energy.[3]

Table 2.8 Silicon metal: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor

Factor	First	Second	Third	Total
Quality	10	6	2	18
Price	4	3	5	12
Availability and supply	3	2	6	11
All other factors	1	4	3	8

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

Note: Other factors include sustainability, customer approvals, service, packaging, and payment terms.

Lead times

Silicon metal is primarily produced-to-order. U.S. producers reported that *** percent of their commercial shipments were produced-to-order, with lead times averaging *** days. The remaining *** percent of their commercial shipments came from inventories, with lead times averaging *** days. Importers reported that *** of their shipments were from U.S. inventories, *** produced to order, and *** from foreign inventories, with lead times of ***, ***, and *** days, respectively.

[2] This information is compiled from responses by purchasers identified by Petitioners or other U.S. producers to the lost sales lost revenue allegations. See Part 5 for additional information.

[3] Staff phone interview with purchaser ***.

Comparison of U.S.-produced and imported silicon metal

In order to determine whether U.S.-produced silicon metal can generally be used in the same applications as imports from Angola, Australia, Laos, Norway, and Thailand, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table 2.9, U.S. producers described silicon metal produced in the U.S. as *** interchangeable with product produced in other countries. Table 2.10 shows a majority of importers reported that silicon metals produced in the United States is always or frequently interchangeable. Importers *** and *** noted that product from Thailand and nonsubject countries is sometimes interchangeable with U.S. product, depending on the product specification. Importers *** and *** reported that interchangeability would depend on the intended use of the silicon metals, with *** describing that "aluminum grade silicon metal cannot be used for chemical applications" and that ***.

Table 2.9 Silicon metal: Count of U.S. producers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
United States vs. Angola	***	***	***	***
United States vs. Australia	***	***	***	***
United States vs. Laos	***	***	***	***
United States vs. Norway	***	***	***	***
United States vs. Thailand	***	***	***	***
Angola vs. Australia	***	***	***	***
Angola vs. Laos	***	***	***	***
Angola vs. Norway	***	***	***	***
Angola vs. Thailand	***	***	***	***
Australia vs. Laos	***	***	***	***
Australia vs. Norway	***	***	***	***
Australia vs. Thailand	***	***	***	***
Laos vs. Norway	***	***	***	***
Laos vs. Thailand	***	***	***	***
Norway vs. Thailand	***	***	***	***
United States vs. Other	***	***	***	***
Angola vs. Other	***	***	***	***
Australia vs. Other	***	***	***	***
Laos vs. Other	***	***	***	***
Norway vs. Other	***	***	***	***
Thailand vs. Other	***	***	***	***

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

Table 2.10 Silicon metal: Count of importers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
United States vs. Angola	2	1	1	0
United States vs. Australia	3	3	2	0
United States vs. Laos	2	2	2	0
United States vs. Norway	3	4	2	0
United States vs. Thailand	2	2	3	0
Angola vs. Australia	2	1	1	0
Angola vs. Laos	2	2	1	0
Angola vs. Norway	2	1	1	0
Angola vs. Thailand	2	2	1	0
Australia vs. Laos	2	1	2	0
Australia vs. Norway	3	3	2	0
Australia vs. Thailand	2	1	3	0
Laos vs. Norway	2	1	2	0
Laos vs. Thailand	2	2	2	0
Norway vs. Thailand	2	1	3	0
United States vs. Other	2	2	3	0
Angola vs. Other	2	1	1	0
Australia vs. Other	2	2	2	0
Laos vs. Other	2	1	2	0
Norway vs. Other	2	2	2	0
Thailand vs. Other	2	1	3	0

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

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of silicon metal from the United States, subject, or nonsubject countries. As seen in tables 2.11 and 2.12, U.S. producers reported that differences other than price are *** significant and most importers *** consider differences other than price significant. Importers *** and *** reported that factors such product quality, grade, and reliability of supply are greater consideration than price.

Table 2.11 Silicon metal: Count of U.S. producers reporting the significance of differences other than price between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
United States vs. Angola	***	***	***	***
United States vs. Australia	***	***	***	***
United States vs. Laos	***	***	***	***
United States vs. Norway	***	***	***	***
United States vs. Thailand	***	***	***	***
Angola vs. Australia	***	***	***	***
Angola vs. Laos	***	***	***	***
Angola vs. Norway	***	***	***	***
Angola vs. Thailand	***	***	***	***
Australia vs. Laos	***	***	***	***
Australia vs. Norway	***	***	***	***
Australia vs. Thailand	***	***	***	***
Laos vs. Norway	***	***	***	***
Laos vs. Thailand	***	***	***	***
Norway vs. Thailand	***	***	***	***
United States vs. Other	***	***	***	***
Angola vs. Other	***	***	***	***
Australia vs. Other	***	***	***	***
Laos vs. Other	***	***	***	***
Norway vs. Other	***	***	***	***
Thailand vs. Other	***	***	***	***

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

Table 2.12 Silicon metal: Count of importers reporting the significance of differences between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
United States vs. Angola	0	1	2	2
United States vs. Australia	1	1	2	2
United States vs. Laos	0	1	2	3
United States vs. Norway	1	1	2	2
United States vs. Thailand	0	1	2	2
Angola vs. Australia	0	1	2	2
Angola vs. Laos	0	1	3	2
Angola vs. Norway	0	1	2	2
Angola vs. Thailand	0	1	3	2
Australia vs. Laos	0	1	2	2
Australia vs. Norway	1	1	2	2
Australia vs. Thailand	0	1	2	2
Laos vs. Norway	0	1	2	2
Laos vs. Thailand	0	1	3	2
Norway vs. Thailand	0	1	2	2
United States vs. Other	0	0	3	2
Angola vs. Other	0	0	3	2
Australia vs. Other	0	0	3	2
Laos vs. Other	0	0	3	2
Norway vs. Other	0	0	3	2
Thailand vs. Other	0	0	3	2

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

Part 3: U.S. producers' production, shipments, and employment

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in Part 1 of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part 4 and Part 5. Information on the other factors specified is presented in this section and/or Part 6 and (except as noted) is based on the questionnaire responses of two firms that accounted for the all U.S. production of silicon metal during 2024.

U.S. producers

The Commission issued a U.S. producer questionnaire to two firms based on information contained in the petition, and both firms provided usable data on their operations. Table 3.1 lists U.S. producers of silicon metal, their production locations, positions on the petition, and shares of total production.

Table 3.1 Silicon metal: U.S. producers, their positions on the petition, production locations, and shares of reported production, 2024

Shares in percent

Firm	Position on petition	Production location(s)	Share of production
Ferroglobe	Petitioner	Alloy, WV Beverly, OH Selma, AL	***
MS Silicon	Petitioner	Burnsville, MS	***
All firms	Various	Various	100.0

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

Table 3.2 presents information on U.S. producers' ownership, related and/or affiliated firms. As indicated in table 3.2, *** U.S. producers are related to foreign producers of the subject merchandise. ***.

Table 3.2 Silicon metal: U.S. producers' ownership, related and/or affiliated firms

Reporting firm	Relationship type and related firm	Details of relationship
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***

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

Table 3.3 presents events in the U.S. industry since January 1, 2022.

Table 3.3 Silicon metal: Important industry events since 2022

Item	Firm	Event
Plant reopening	Ferroglobe	In early 2022, a 170,000-square-foot silicon metal manufacturing facility in Selma, Alabama reopened, employing around 100 workers.
Input cost increase	Ferroglobe	A company official testified to the West Virginia Public Service Commission that electricity rates at the Alloy, West Virginia manufacturing plant had increased twelve percent through September in 2022 alone, and that further electricity price increases threatened 244 jobs.
Tax credits	Ferroglobe	In early 2023, the Selma, Alabama manufacturing facility received $13.5 million in tax credits to refurbish its two furnaces and make other improvements.
Planned Layoffs	Ferroglobe	In December 2023, the mayor of Selma, Alabama announced that Globe planned to lay off 40 of the 100 workers at the Selma, Alabama manufacturing facility.
Plant idled	Ferroglobe	In December 2023, the Selma, Alabama plant was idled and remains idled with no hourly employees as of April 25, 2025.
New plant construction	Sinova Global	Sinova Global continues construction on a new silicon metal plant in Tiptonville, Tennessee as of May 2025.

Source: Globe Metallurgical Plant Receives $13.5 Million in Tax Credits to Improve Infrastructure, Selma Sun, February 2, 2023, https://selmasun.com/news/globe-metallurgical-plant-receives-13-5-million-in-tax-credits-to-improve-infrastructure/article_ee42a9e8-a34f-11ed-8b2c-af8c8d1095e6.html, retrieved May 16, 2025; Selma Facility Set to Lay-off Close to 40 Workers in 'Right Sizing,' WSFA 12 News, December 22, 2023. https://www.wsfa.com/2023/12/22/selma-facility-set-lay-off-close-40-workers-right-sizing/, retrieved May 16, 2025; "Silicon Metals Maker Says Electric Rate Increases Are 'Unsustainable," WV Public Broadcasting, September 2022, https://wvpublic.org/silicon-metals-maker-says-electric-rate-increases-are-unsustainable/, retrieved May 19, 2025; Ferroglobe PLC, April 25, 2025, Form 20-F, https://www.ferroglobe.com/sec-filings/sec-filing/20-f/0001558370-25-005495; Whillans, Cara. "Sinova Global's High Purity Quartz Quarry Reopens to Address Critical Mineral Shortage in North America," Sinova Global, May 14, 2025. https://sinovaglobal.com/news/sinova-globals-high-purity-quartz-quarry-reopens/, retrieved May 19, 2025.

Producers in the United States were asked to report any change in the character of their operations or organization relating to the production of silicon metal since 2022. *** producers indicated in their questionnaires that they had experienced such changes. Table 3.4 presents the changes identified by these producers.

Table 3.4 Silicon metal: U.S. producers' reported changes in operations, since January 1, 2022

Item	Firm name and narrative response on changes in operations
Plant closings	***.
Prolonged shutdowns	***.
Acquisitions	***.

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

U.S. production, capacity, and capacity utilization

Table 3.5 presents U.S. producers' installed and practical capacity, production, and utilization on the same equipment as subject production. Installed overall capacity decreased each year since 2022, due to ***. Installed overall production decreased in 2023 from 2022 and increased in 2024, ending *** percent lower than 2022 levels. U.S. producers' installed overall capacity utilization increased each year from 2022 to 2024. Practical overall capacity decreased *** percent from 2022 to 2024. Practical overall production decreased irregularly from 2022 to 2024, having decreased in 2023 and increased in 2024. Practical overall capacity utilization increased each year from 2022 to 2024. Practical silicon metal capacity decreased each year from 2022 to 2024. Practical silicon metal production decreased in 2023 from 2022 levels and increased in 2024 from 2023 levels, ending lower in 2024 than 2022. Practical capacity utilization increased irregularly from 2022 to 2024, having decreased in 2023 from 2022.

Table 3.5 Silicon metal: U.S. producers' installed and practical capacity, production, and utilization on the same equipment as subject production, by period

Capacity and production in short tons contained silicon; utilization in percent

Item	Measure	2022	2023	2024
Installed overall	Capacity	***	***	***
Installed overall	Production	***	***	***
Installed overall	Utilization	***	***	***
Practical overall	Capacity	***	***	***
Practical overall	Production	***	***	***
Practical overall	Utilization	***	***	***
Practical Silicon metal	Capacity	***	***	***
Practical Silicon metal	Production	***	***	***
Practical Silicon metal	Utilization	***	***	***

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

Table 3.6 presents U.S. producers' reported narratives regarding practical capacity constraints. ***.

Table 3.6 Silicon metal: U.S. producers' reported capacity constraints since January 1, 2022

Item	Firm name and narrative response on constraints to practical overall capacity
Other constraints	***.
Other constraints	***

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

Table 3.7 and figure 3.1 present U.S. producers' production, capacity, and capacity utilization. Reflecting Ferroglobe's closure of its Selma Alabama facility in October 2023,[1] the firm's capacity declined each year, while MS Silicon's capacity was unchanged. Total capacity for combined U.S. firms was lower each year from 2022 to 2024, declining *** percent between 2022 and 2024. Ferroglobe's production was lower each year, while MS Silicon's production was lower in 2023 than in 2022 and was higher in 2024, ending *** lower than in 2022. Total production for U.S. firms aggregated was lower in 2023 than in 2022, and higher in 2024, but ending *** percent lower than in 2022. U.S. producers' capacity utilization, reflecting those of both U.S. producers, fluctuated, declining in 2023 and increasing in 2024, ending *** percentage points higher than in 2022. Shares of production output between the two firms *** from 2022 to 2024 with Ferroglobe *** during the period of investigation.

Table 3.7 Silicon metal: U.S. producers' output, by firm and period

Practical capacity

Capacity in short tons contained silicon

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 3.7 (Continued) Silicon metal: U.S. producers' output, by firm and period

Production

Production in short tons contained silicon

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

[1] Conference transcript, p. 24 (Chaal).

Table 3.7 (Continued) Silicon metal: U.S. producers' output, by firm and period

Capacity utilization

Capacity utilization ratios in percent

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Note: Capacity utilization ratio represents the ratio of the U.S. producer's production to its production capacity.

Table continued.

Table 3.7 (Continued) Silicon metal: U.S. producers' output, by firm and period

Share of production

Share in percent

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	100.0	100.0	100.0

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

Figure 3.1 Silicon metal: U.S. producers' output, by period

* * * * * * *

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

Alternative products

As shown in table 3.8, more than *** percent of the product produced during 2022 through 2024 by U.S. producers was silicon metal. *** reported producing ferrosilicon. Ferrosilicon made up *** of U.S. producers' production during 2022 through 2024, with other products representing *** percent of U.S. producers' total production during 2022 through 2024.

Table 3.8 Silicon metal: U.S. producers' overall production on the same equipment as in-scope production, by period

Quantity in short tons; share in percent

Product type	Measure	2022	2023	2024
Silicon metal, contained weight	Quantity	***	***	***
Silicon metal, weight of other elements	Quantity	***	***	***
Silicon metal, total weight	Quantity	***	***	***
Ferrosilicon	Quantity	***	***	***
Other products	Quantity	***	***	***
Out of scope products	Quantity	***	***	***
All products	Quantity	***	***	***
Silicon metal, contained weight	Share	***	***	***
Silicon metal, weight of other elements	Share	***	***	***
Silicon metal, total weight	Share	***	***	***
Ferrosilicon	Share	***	***	***
Other products	Share	***	***	***
Out of scope products	Share	***	***	***
All products	Share	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

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

Table 3.9 presents U.S. producers' U.S. shipments, export shipments, and total shipments. Export shipments increased from *** percent of total shipments in 2022 to *** percent in 2024.[2] The unit values of U.S. producers' U.S. shipments decreased by *** percent between 2022 and 2024, with the largest decline (by $*** per STCS) in 2023. The unit values of U.S. producers' exports, which were consistently lower than those of their U.S. shipments, decreased *** percent between 2023 and 2024.

Table 3.9 Silicon metal: U.S. producers' total shipments, by destination and period

Quantity in short tons contained silicon; value in 1,000 dollars; unit values in dollars per STCS; shares in percent

Item	Measure	2022	2023	2024
U.S. shipments	Quantity	***	***	***
Export shipments	Quantity	***	***	***
Total shipments	Quantity	***	***	***
U.S. shipments	Value	***	***	***
Export shipments	Value	***	***	***
Total shipments	Value	***	***	***
U.S. shipments	Unit value	***	***	***
Export shipments	Unit value	***	***	***
Total shipments	Unit value	***	***	***
U.S. shipments	Share of quantity	***	***	***
Export shipments	Share of quantity	***	***	***
Total shipments	Share of quantity	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***
Export shipments	Share of value	***	***	***
Total shipments	Share of value	100.0	100.0	100.0

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

[2] ***.

Table 3.10 presents U.S. producers' U.S. shipments by type.[3] The share of commercial U.S. shipments decreased irregularly by *** percentage points from 2022 to 2024, increasing by *** percentage points in 2023 and decreasing by *** percentage points in 2024. The share of transfers to related firms made up the remainder of these shares and moved in the opposite directions in each period.[4]

Table 3.10 Silicon metal: U.S. producers' U.S. shipments, by type and period

Quantity in short tons contained silicon; value in 1,000 dollars; unit values in dollars per STCS

Item	Measure	2022	2023	2024
Commercial U.S. shipments	Quantity	***	***	***
Transfers to related firms	Quantity	***	***	***
U.S. shipments	Quantity	***	***	***
Commercial U.S. shipments	Value	***	***	***
Transfers to related firms	Value	***	***	***
U.S. shipments	Value	***	***	***
Commercial U.S. shipments	Unit value	***	***	***
Transfers to related firms	Unit value	***	***	***
U.S. shipments	Unit value	***	***	***
Commercial U.S. shipments	Share of quantity	***	***	***
Transfers to related firms	Share of quantity	***	***	***
U.S. shipments	Share of quantity	100.0	100.0	100.0
Commercial U.S. shipments	Share of value	***	***	***
Transfers to related firms	Share of value	***	***	***
U.S. shipments	Share of value	100.0	100.0	100.0

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

[3] No firm reported internal consumption.

[4] ***.

Captive consumption

Section 771(7)(C)(iv) of the Act states that–[5]

> *If domestic producers internally transfer significant production of the domestic like product for the production of a downstream article and sell significant production of the domestic like product in the merchant market, and the Commission finds that–*
>
> *(I) the domestic like product produced that is internally transferred for processing into that downstream article does not enter the merchant market for the domestic like product,*
> *(II) the domestic like product is the predominant material input in the production of that downstream article, and*
> *(III) then the Commission, in determining market share and the factors affecting financial performance . . ., shall focus primarily on the merchant market for the domestic like product.*

Transfers and sales

As reported in table 3.10, transfers to related firms accounted for between *** and *** percent of U.S. producers' U.S. shipments of silicon metal.

First statutory criterion in captive consumption

The first requirement for application of the captive consumption provision is that the domestic like product that is internally transferred for processing into that downstream article not enter the merchant market for the domestic like product. U.S. producers reported transfers of silicon metal for the production of downstream silicon metal. As shown in table 3.11, between *** percent and *** percent of the silicon metal transferred was processed into downstream products.

[5] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

Table 3.11 Silicon metal: U.S. producers' production used in downstream products, by type of consumption and period

Quantity in short tons contained silicon; Share in percent

Item	Measure	2022	2023	2024
Sold as is	Quantity	***	***	***
Processed into downstream products	Quantity	***	***	***
IC and transfers	Quantity	***	***	***
Sold as is	Share	***	***	***
Processed into downstream products	Share	***	***	***
IC and transfers	Share	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Note: *** reported transfers in 2022 that it indicated was sold as-is; while *** reported transfers to related firms throughout the period that represented silicon metal produced at ***.

Second statutory criterion in captive consumption

The second criterion of the captive consumption provision concerns whether the domestic like product is the predominant material input in the production of the downstream article that is captively produced. With respect to the downstream articles resulting from captive production, silicon metal reportedly comprises *** percent of the finished cost of downstream product (table 3.12).

Table 3.12 Silicon metal: U.S. producers' contribution of silicon metal to downstream products

Share in percent

Material input	Share of value	Share of quantity
Silicon metal	***	***
All other material inputs	***	***
All material inputs	100.0	100.0

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

Note : ***.

U.S. producers' inventories

Table 3.13 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments. End of period inventories decreased irregularly *** percent over the period of investigation having decreased in 2023 from 2022 quantities and increased in 2024 from 2023 quantities.[6] The end-of-period inventory ratio to U.S. production changed irregularly, ending lower by *** percentage points in 2024 than in 2022.

Table 3.13 Silicon metal: U.S. producers' inventories and their ratio to select items, by period

Quantity in short tons contained silicon; ratios in percent

Item	2022	2023	2024
End-of-period inventory quantity	***	***	***
Inventory ratio to U.S. production	***	***	***
Inventory ratio to U.S. shipments	***	***	***
Inventory ratio to total shipments	***	***	***

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

[6] ***. For each firm, their respective inventory ratios following similar trends. See Table 13.3

U.S. employment, wages, and productivity

Table 3.14 shows U.S. producers' employment-related data. U.S. producer's production and related workers decreased each year from 2022 to 2024. Total hours worked decreased in 2024 compared to 2022 but increased in 2023 from 2022. Hours worked per production and related worker increased in 2023 from 2022. Hours decreased in 2024 from 2023 but remained higher than 2022 hours. Total wages increased in 2023 from 2022 and decreased in 2024 from 2022. Hourly wages as dollars per hour were *** in 2023 compared to 2022 and increased in 2024 than in 2022. During 2022 to 2024 productivity represented by production of short tons contained silicon per hour, ***. Unit labor costs decreased irregularly from 2022 to 2024 after rising in 2023 from 2022 rates.

Table 3.14 Silicon metal: U.S. producers' employment related information, by period

Item	2022	2023	2024
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 (STCS per 1,000 hours)	***	***	***
Unit labor costs (dollars per STCS)	***	***	***

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

Part 4: U.S. imports, apparent U.S. consumption, and market shares

U.S. importers

The Commission issued importer questionnaires to 19 firms believed to be importers of subject silicon metal, as well as to all U.S. producers of silicon metal.[1] Usable questionnaire responses were received from 11 companies, representing: 89.7 percent of U.S. imports from subject sources in 2024 HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000[2]. Firms responding to the Commission's questionnaire accounted for the following shares of imports (as a share of official Commerce statistics, by quantity) in 2024.

- *** percent of imports from Angola[3]
- *** percent of imports from Australia
- *** percent of imports from Laos
- *** percent of imports from Norway
- *** percent of imports from Thailand
- *** percent of imports from nonsubject sources

Table 4.1 lists all responding U.S. importers of silicon metal from Angola, Australia, Laos, Norway, and Thailand and other sources, their locations, and their shares of U.S. imports, in 2024.

[1] The Commission issued questionnaires to those firms identified in the petition; staff research; and proprietary, Census-edited Customs' import records.

[2] The coverage estimates presented are calculated from official U.S. import statistics based on General Imports. General Imports measure the total physical arrivals of merchandise from foreign countries, whether such merchandise enters the U.S. customs territory immediately or is entered into bonded warehouses or FTZs under Customs custody.

[3] No importer questionnaire response from *** was received by the Commission during these primary investigations.

Table 4.1 Silicon metal: U.S. importers, their headquarters, and share of total imports within a given source by firm, 2024

Shares in percent

Firm	Headquarters	Angola	Australia	Laos	Norway	Thailand
BIT Metals	Amstelveen, Netherlands	***	***	***	***	***
Dow	Midland, MI	***	***	***	***	***
Elkem Materials	Moon Township, PA	***	***	***	***	***
Ferroglobe	Waterford, OH	***	***	***	***	***
Hemlock	Hemlock, MI	***	***	***	***	***
HSA	Theodore, AL	***	***	***	***	***
MTALX	London, UK	***	***	***	***	***
Polymet	Birmingham, AL	***	***	***	***	***
Simcoa	Wellesley, WA	***	***	***	***	***
Wacker	Charleston, TN	***	***	***	***	***
William Rowland	Toronto, Canada, Ontario	***	***	***	***	***
All firms	Various	100.0	100.0	100.0	100.0	100.0

Table continued.

Table 4.1 (Continued) Silicon metal: U.S. importers, their headquarters, and share of total imports within a given source by firm, 2024

Shares in percent

Firm	Headquarters	Subject Sources	Nonsubject sources	All import sources
BIT Metals	Amstelveen, Netherlands	***	***	***
Dow	Midland, MI	***	***	***
Elkem Materials	Moon Township, PA	***	***	***
Ferroglobe	Waterford, OH	***	***	***
Hemlock	Hemlock, MI	***	***	***
HSA	Theodore, AL	***	***	***
MTALX	London, UK	***	***	***
Polymet	Birmingham, AL	***	***	***
Simcoa	Wellesley, WA	***	***	***
Wacker	Charleston, TN	***	***	***
William Rowland	Toronto, Canada, Ontario	***	***	***
All firms	Various	100.0	100.0	100.0

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "—".

U.S. imports

Table 4.2 and figures 4.1 and 4.2 present data for U.S. imports of silicon metal by source. The quantity of U.S. imports from subject sources decreased by 33.0 percent in 2023 and increased by 124.4 percent in 2024, ending 50.4 percent higher than in 2022. U.S. imports from each subject country, except Norway and Thailand, were higher in 2024 than in 2022. U.S. imports from nonsubject sources followed a similar pattern to those from aggregated subject sources, although ending 16.7 percent lower in 2024 than in 2022.

The share of U.S. imports from subject sources increased from 17.1 percent in 2022 to 26.6 percent in 2024 or by 9.5 percentage points. The average unit value of imports from subject sources decreased by 24.6 percent in 2023 and by 22.5 percent in 2024, ending 41.5 percent lower than in 2022. U.S. imports from each individual subject country and from nonsubject sources, the largest source, followed this pattern, with the exception of Angola for which 2024 was the first year of importation.

The ratio of U.S. imports from subject sources to U.S. production increased irregularly from 2022 to 2024, from *** percent in 2022 to *** percent in 2024. The ratio of U.S. imports from nonsubject sources to U.S. production decreased irregularly over the same period, from *** percent in 2022 to *** percent in 2024.

Table 4.2 Silicon metal: U.S. imports, by source and period

Quantity in short tons contained silicon; value in 1,000 dollars; unit values in dollars per STCS

Source	Measure	2022	2023	2024
Angola	Quantity	—	—	1,829
Australia	Quantity	4,933	2,605	14,237
Laos	Quantity	649	3,936	8,493
Norway	Quantity	14,622	10,336	14,488
Thailand	Quantity	8,213	2,168	3,686
Subject sources	Quantity	28,418	19,045	42,733
Subject sources less Angola and Thailand	Quantity	20,204	16,877	37,218
Nonsubject sources	Quantity	137,985	92,029	118,206
Nonsubject sources plus Angola and Thailand	Quantity	146,199	94,197	123,720
All import sources	Quantity	166,403	111,074	160,939
Angola	Value	—	—	4,226
Australia	Value	19,696	9,954	45,598
Laos	Value	1,958	9,790	18,868
Norway	Value	85,717	44,214	45,055
Thailand	Value	32,569	6,784	9,305
Subject sources	Value	139,940	70,743	123,052
Subject sources less Angola and Thailand	Value	107,371	63,958	109,521
Nonsubject sources	Value	616,163	372,248	355,283
Nonsubject sources plus Angola and Thailand	Value	648,732	379,032	368,814
All import sources	Value	756,103	442,991	478,335
Angola	Unit value	—	—	2,311
Australia	Unit value	3,993	3,821	3,203
Laos	Unit value	3,015	2,488	2,222
Norway	Unit value	5,862	4,278	3,110
Thailand	Unit value	3,965	3,130	2,525
Subject sources	Unit value	4,924	3,715	2,880
Subject sources less Angola and Thailand	Unit value	5,314	3,790	2,943
Nonsubject sources	Unit value	4,465	4,045	3,006
Nonsubject sources plus Angola and Thailand	Unit value	4,437	4,024	2,981
All import sources	Unit value	4,544	3,988	2,972

Table continued.

Table 4.2 (Continued) Silicon metal: U.S. imports, by source and period

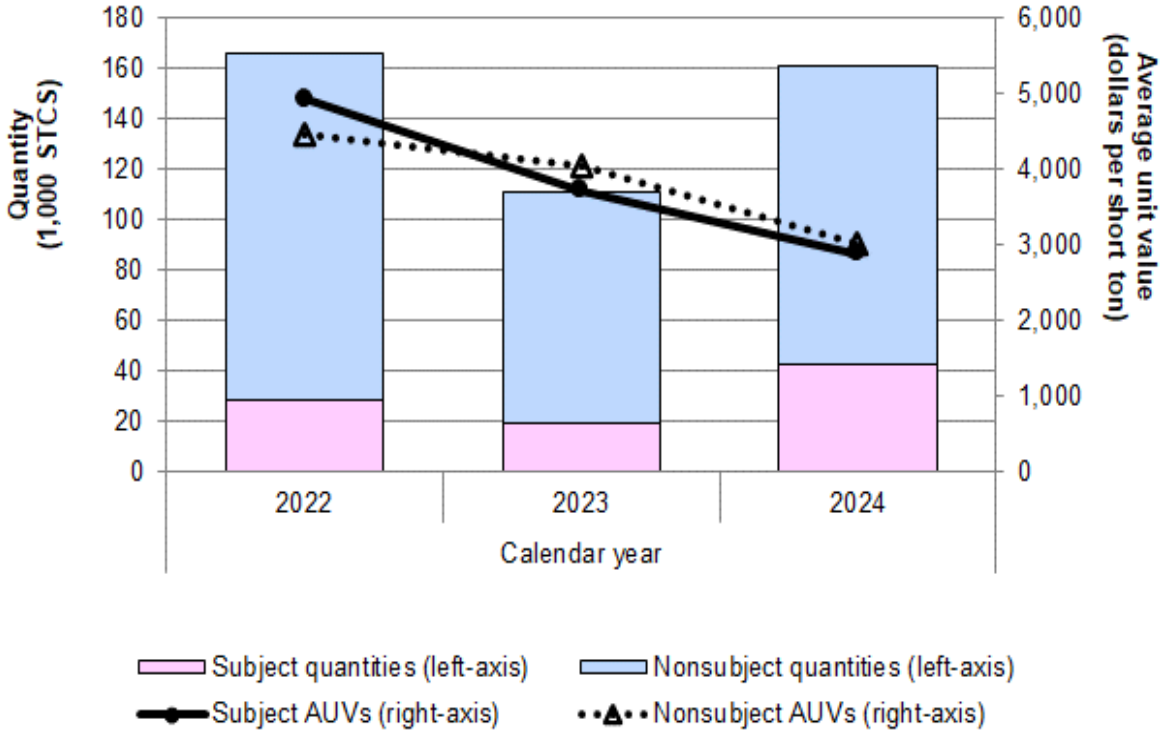
Share and ratio in percent; ratio represents the ratio to U.S. production

Source	Measure	2022	2023	2024
Angola	Share of quantity	—	—	1.1
Australia	Share of quantity	3.0	2.3	8.8
Laos	Share of quantity	0.4	3.5	5.3
Norway	Share of quantity	8.8	9.3	9.0
Thailand	Share of quantity	4.9	2.0	2.3
Subject sources	Share of quantity	17.1	17.1	26.6
Subject sources less Angola and Thailand	Share of quantity	12.1	15.2	23.1
Nonsubject sources	Share of quantity	82.9	82.9	73.4
Nonsubject sources plus Angola and Thailand	Share of quantity	87.9	84.8	76.9
All import sources	Share of quantity	100.0	100.0	100.0
Angola	Share of value	—	—	0.9
Australia	Share of value	2.6	2.2	9.5
Laos	Share of value	0.3	2.2	3.9
Norway	Share of value	11.3	10.0	9.4
Thailand	Share of value	4.3	1.5	1.9
Subject sources	Share of value	18.5	16.0	25.7
Subject sources less Angola and Thailand	Share of value	14.2	14.4	22.9
Nonsubject sources	Share of value	81.5	84.0	74.3
Nonsubject sources plus Angola and Thailand	Share of value	85.8	85.6	77.1
All import sources	Share of value	100.0	100.0	100.0
Angola	Ratio	***	***	***
Australia	Ratio	***	***	***
Laos	Ratio	***	***	***
Norway	Ratio	***	***	***
Thailand	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Subject sources less Angola and Thailand	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
Nonsubject sources plus Angola and Thailand	Ratio	***	***	***
All import sources	Ratio	***	***	***

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Value data reflect CIF values.

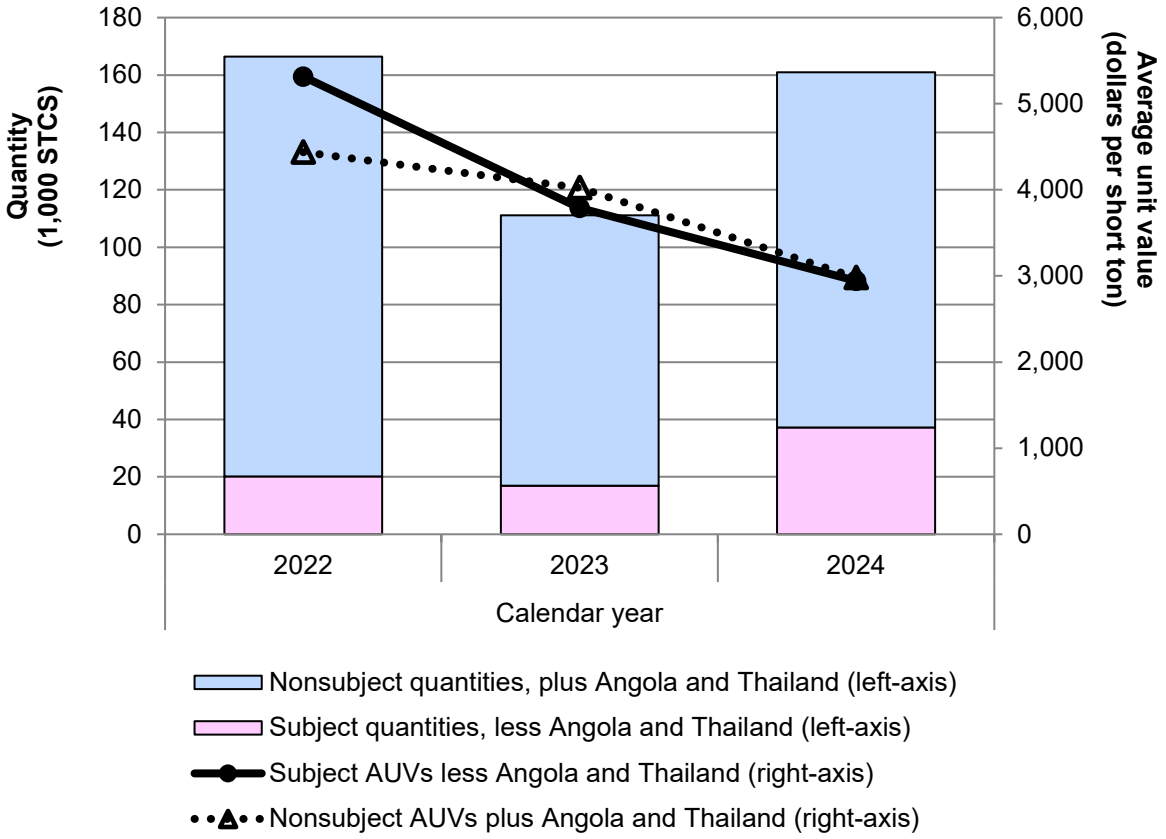
Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Figure 4.1 Silicon metal: U.S. import quantities and average unit values treating Angola and Thailand as subject, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Value data reflect CIF values.

Figure 4.2 Silicon metal: U.S. import quantities and average unit values treating Angola and Thailand as nonsubject, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Value data reflect CIF values.

Table 4.3 presents data on U.S. imports from nonsubject sources including the four highest sources, in order of 2024 imports, followed by all other nonsubject sources. Figure 4.3 presents data on average unit values of U.S. producers' U.S. shipments and U.S. imports. U.S. imports from each of these sources was lower in 2023 and higher in 2024, although all but U.S. imports from Canada and France were lower in 2024 than in 2022. Average unit values from each individual source, except France and all other nonsubject sources, declined in each year, and were lower in 2024 than in 2022, with the exception of all other nonsubject sources.

Table 4.3 Silicon metal: U.S. imports from nonsubject sources, by source and period

Quantity in short tons contained silicon; value in 1,000 dollars; unit values in dollars per STCS

Source	Measure	2022	2023	2024
Brazil	Quantity	88,243	59,111	65,520
Canada	Quantity	33,915	31,084	36,882
Malaysia	Quantity	9,482	588	6,938
France	Quantity	230	191	3,761
South Africa	Quantity	22	77	1,551
Germany	Quantity	884	443	678
Spain	Quantity	62	10	142
All other nonsubject sources	Quantity	5,149	526	2,733
Nonsubject sources	Quantity	137,985	92,029	118,206
Brazil	Value	371,484	238,181	197,015
Canada	Value	181,336	128,466	114,364
Malaysia	Value	47,871	1,404	19,500
France	Value	820	680	10,864
South Africa	Value	83	204	3,967
Germany	Value	2,289	1,228	1,604
Spain	Value	202	83	610
All other nonsubject sources	Value	12,077	2,002	7,359
Nonsubject sources	Value	616,163	372,248	355,283
Brazil	Unit value	4,210	4,029	3,007
Canada	Unit value	5,347	4,133	3,101
Malaysia	Unit value	5,049	2,389	2,810
France	Unit value	3,565	3,570	2,888
South Africa	Unit value	3,840	2,653	2,558
Germany	Unit value	2,591	2,775	2,367
Spain	Unit value	3,269	7,951	4,296
All other nonsubject sources	Unit value	2,346	3,803	2,692
Nonsubject sources	Unit value	4,465	4,045	3,006

Table continued.

Table 4.3 (Continued) Silicon metal: U.S. imports from nonsubject sources, by source and period

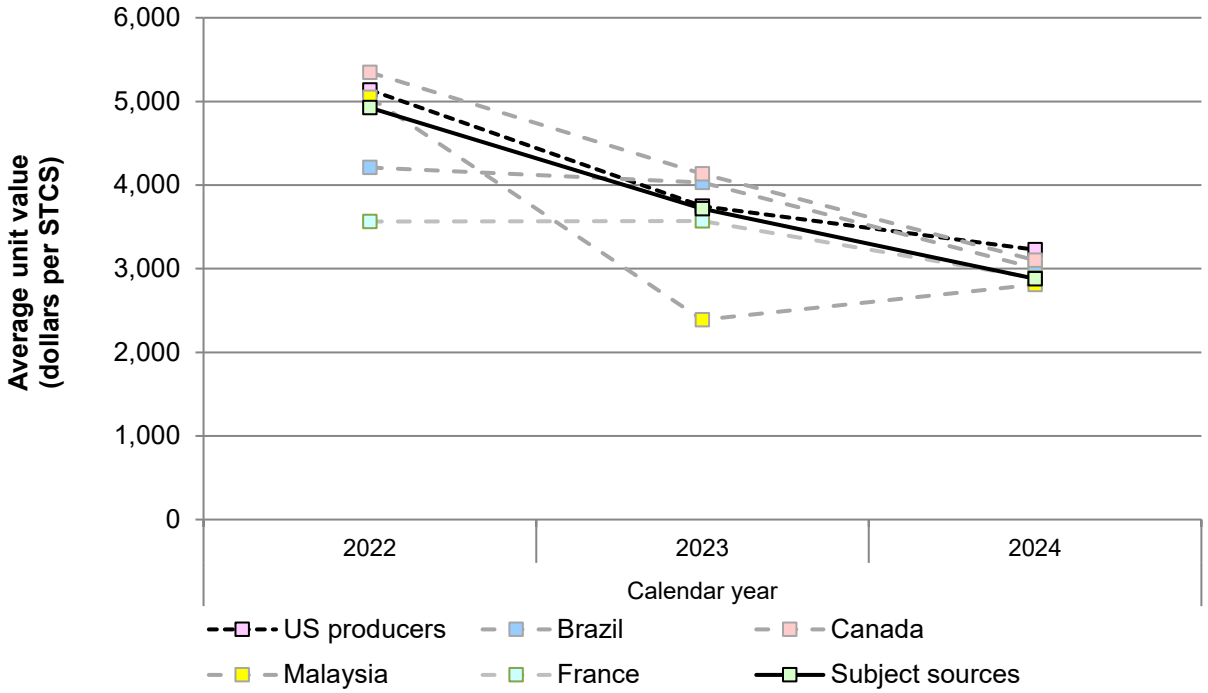
Share and ratio in percent; ratio represents the ratio to U.S. production

Source	Measure	2022	2023	2024
Brazil	Share of quantity	53.0	53.2	40.7
Canada	Share of quantity	20.4	28.0	22.9
Malaysia	Share of quantity	5.7	0.5	4.3
France	Share of quantity	0.1	0.2	2.3
South Africa	Share of quantity	0.0	0.1	1.0
Germany	Share of quantity	0.5	0.4	0.4
Spain	Share of quantity	0.0	0.0	0.1
All other nonsubject sources	Share of quantity	3.1	0.5	1.7
Nonsubject sources	Share of quantity	82.9	82.9	73.4
Brazil	Share of value	49.1	53.8	41.2
Canada	Share of value	24.0	29.0	23.9
Malaysia	Share of value	6.3	0.3	4.1
France	Share of value	0.1	0.2	2.3
South Africa	Share of value	0.0	0.0	0.8
Germany	Share of value	0.3	0.3	0.3
Spain	Share of value	0.0	0.0	0.1
All other nonsubject sources	Share of value	1.6	0.5	1.5
Nonsubject sources	Share of value	81.5	84.0	74.3

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Value data reflect CIF values.

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

Figure 4.3 Silicon metal: U.S. producers' US shipments average unit values and US imports average unit values, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Value data reflect CIF values.

Table 4.4 presents data on U.S. producers' and/or their affiliated U.S. importers' U.S. imports, by source and period. U.S. producers and their affiliated firms imported ***. These imports increased irregularly from 2022 to 2024. The share of these imports was *** percent of imports from nonsubject sources and *** percent of all import sources in 2022. In 2023 this share was lower to *** percent of imports from nonsubject sources and *** percent of all import sources. In 2024 this share was higher in both groups listed by *** percent and *** percent respectively.

Table 4.4 Silicon metal: U.S. producers' and/or their affiliated U.S. importers' U.S. imports, by source and period

Quantity in short tons contained silicon; share in percent

Source	Measure	2022	2023	2024
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
Subject sources	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—". Share is to imports by source as presented in Table 4.2.

Table 4.5 presents data on U.S. imports from foreign producers affiliated with U.S. producers by source and period. The share of imports from all these sources together increased each year during 2022 to 2024. The share of these imports was *** percent in 2022, *** percent in 2023, and *** percent in 2024. Affiliated foreign producers include the following: ***. Part 3 presented more information on firm affiliations.

Table 4.5 Silicon metal: U.S. imports from foreign producers affiliated with U.S. producers, by source and period

Quantity in short tons contained silicon; share in percent

Source	Measure	2022	2023	2024
Subject sources	Quantity	***	***	***
Brazil	Quantity	***	***	***
Canada	Quantity	***	***	***
France	Quantity	***	***	***
Malaysia	Quantity	***	***	***
South Africa	Quantity	***	***	***
Germany	Quantity	***	***	***
Spain	Quantity	***	***	***
All other nonsubject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
Subject sources	Share	***	***	***
Brazil	Share	***	***	***
Canada	Share	***	***	***
France	Share	***	***	***
Malaysia	Share	***	***	***
South Africa	Share	***	***	***
Germany	Share	***	***	***
Spain	Share	***	***	***
All other nonsubject sources	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***

Source: Compiled from proprietary, Census-edited Customs import records using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 12, 2025. Imports are based on the general imports data series.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—". Share is to imports by source as presented in Table 4.2.

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[4] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[5]

Table 4.6 and 4.7 presents data on U.S. imports in the twelve month period preceding the filing of the petition and U.S. imports from Angola, Thailand and all other sources in various twelve month periods immediately prior to the filing of the petition. Figure 4.4 presents data on the share of U.S. imports from Angola and Thailand out of total imports in the various twelve month periods in the lead up to the filing of the petition. Imports from Angola, Australia, Laos, Norway, and Thailand totaled 26.7 percent of the total volume of subject merchandise. Imports from Angola and Thailand accounted for 1.9 and 1.2 percent of total imports of silicon metal by quantity, respectively, from April 2024 through March 2025.

[4] Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).

[5] Section 771 (24) of the Act (19 U.S.C § 1677(24)).

Table 4.6 Silicon metal: U.S. imports in the twelve-month period preceding the filing of the petition, April 2024 through March 2025

Quantity in short tons contained silicon; share of quantity in percent

Source of imports	Quantity	Share of quantity
Angola	3,459	1.9
Australia	15,269	8.3
Laos	9,027	4.9
Norway	19,262	10.4
Thailand	2,191	1.2
All other sources	135,136	73.3
All import sources	184,344	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 12, 2025. Imports are based on the general imports data series.

Table 4.7 Silicon metal: U.S. imports from Angola, Thailand, and all other sources in various twelve month periods immediately prior to the filing of the petition

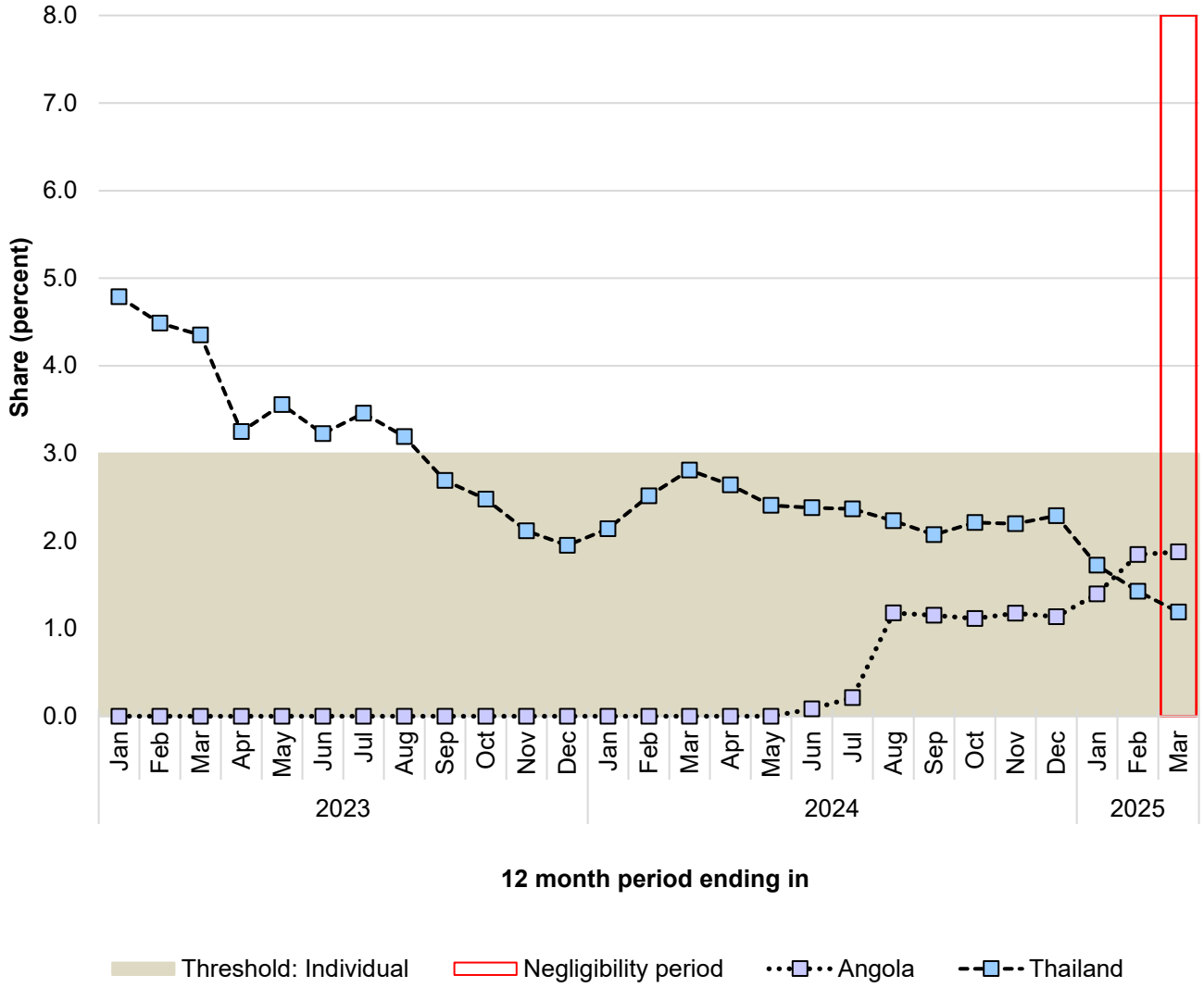
Quantity in short tons contained silicon; share in percent

Twelve month period through to and including	Angola quantity	Thailand quantity	All other sources quantity	All import sources quantity	Angola share	Thailand share	All other sources share	All import sources share
Jan 2023	—	7,872	156,534	164,406	—	4.8	95.2	100.0
Feb 2023	—	6,958	148,076	155,035	—	4.5	95.5	100.0
Mar 2023	—	6,504	142,911	149,415	—	4.4	95.6	100.0
Apr 2023	—	4,525	134,685	139,210	—	3.3	96.7	100.0
May 2023	—	4,207	114,014	118,221	—	3.6	96.4	100.0
Jun 2023	—	3,898	116,994	120,892	—	3.2	96.8	100.0
Jul 2023	—	4,234	118,189	122,423	—	3.5	96.5	100.0
Aug 2023	—	3,979	120,633	124,612	—	3.2	96.8	100.0
Sep 2023	—	3,267	118,081	121,348	—	2.7	97.3	100.0
Oct 2023	—	2,874	113,087	115,961	—	2.5	97.5	100.0
Nov 2023	—	2,454	113,528	115,982	—	2.1	97.9	100.0
Dec 2023	—	2,168	108,907	111,074	—	2.0	98.0	100.0
Jan 2024	—	2,436	111,465	113,901	—	2.1	97.9	100.0
Feb 2024	—	2,870	111,226	114,096	—	2.5	97.5	100.0
Mar 2024	—	3,252	112,539	115,791	—	2.8	97.2	100.0
Apr 2024	—	3,249	119,811	123,060	—	2.6	97.4	100.0
May 2024	—	3,065	124,270	127,335	—	2.4	97.6	100.0
Jun 2024	105	3,015	123,636	126,756	0.1	2.4	97.5	100.0
Jul 2024	288	3,192	131,483	134,962	0.2	2.4	97.4	100.0
Aug 2024	1,590	3,008	130,223	134,821	1.2	2.2	96.6	100.0
Sep 2024	1,669	3,008	140,351	145,028	1.2	2.1	96.8	100.0
Oct 2024	1,669	3,304	144,529	149,502	1.1	2.2	96.7	100.0
Nov 2024	1,790	3,346	147,180	152,317	1.2	2.2	96.6	100.0
Dec 2024	1,829	3,686	155,424	160,939	1.1	2.3	96.6	100.0
Jan 2025	2,383	2,946	165,496	170,826	1.4	1.7	96.9	100.0
Feb 2025	3,248	2,512	170,392	176,153	1.8	1.4	96.7	100.0
Mar 2025	3,459	2,191	178,693	184,344	1.9	1.2	96.9	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 12, 2025. Imports are based on the general imports data series.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Figure 4.4 Silicon metal: Share of U.S. imports from Angola and Thailand out of total imports in the various twelve month periods in the lead up to the filing of the petition, by period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 12, 2025. Imports are based on the general imports data series.

Cumulation considerations

In assessing whether imports should be cumulated, the Commission determines whether U.S. imports from the subject countries compete with each other and with the domestic like product and has generally considered four factors: (1) fungibility, (2) presence of sales or offers to sell in the same geographical markets, (3) common or similar channels of distribution, and (4) simultaneous presence in the market. Information regarding channels of distribution, market areas, and interchangeability appear in Part 2. Additional information concerning fungibility, geographical markets, and simultaneous presence in the market is presented below. More information on U.S. shipments by product grade and source and U.S producers and U.S. importers shipments with each channel can be found in appendixes D and E.

Fungibility

The Commission requested information concerning U.S. producers' and U.S. importers' U.S. shipments of silicon metal, by grade, for calendar year 2024.[6] These data are presented in table 4.8 and figure 4.5. Every individual source had U.S. shipments of both high purity grade and other grades, although of differing proportions.

Table 4.8 Silicon metal: U.S. producers' and U.S. importers' U.S. shipments, by source and product grade, 2024

Quantity in short tons contained silicon

Source	High purity grade	Other grades	All grades
U.S. producers	***	***	***
Angola	***	***	***
Australia	***	***	***
Laos	***	***	***
Norway	***	***	***
Thailand	***	***	***
Subject sources	***	***	***
Subject sources less Angola and Thailand	***	***	***
Nonsubject sources	***	***	***
Nonsubject sources plus Angola and Thailand	***	***	***
All import sources	***	***	***
All sources	***	***	***

Table continued.

[6] High purity grade was defined as Silicon metal with a silicon (Si) content greater than or equal to 99.1, iron (Fe) content less than or equal to 0.30, aluminum (Al) content less than or equal to 0.30, calcium (Ca) content less than or equal to 0.05, titanium (Ti) content less than or equal to 0.05, and a carbon (C) content less than or equal to 0.15.

Table 4.8 (Continued) Silicon metal: U.S. producers' and U.S. importers' U.S. shipments, by source and product grade, 2024

Share across in percent

Source	High purity grade	Other grades	All grades
U.S. producers	***	***	100.0
Angola	***	***	100.0
Australia	***	***	100.0
Laos	***	***	100.0
Norway	***	***	100.0
Thailand	***	***	100.0
Subject sources	***	***	100.0
Subject sources less Angola and Thailand	***	***	100.0
Nonsubject sources	***	***	100.0
Nonsubject sources plus Angola and Thailand	***	***	100.0
All import sources	***	***	100.0
All sources	***	***	100.0

Table continued.

Table 4.8 (Continued) Silicon metal: U.S. producers' and U.S. importers' U.S. shipments, by source and product grade, 2024

Share down in percent

Source	High purity grade	Other grades	All grades
U.S. producers	***	***	***
Angola	***	***	***
Australia	***	***	***
Laos	***	***	***
Norway	***	***	***
Thailand	***	***	***
Subject sources	***	***	***
Subject sources less Angola and Thailand	***	***	***
Nonsubject sources	***	***	***
Nonsubject sources plus Angola and Thailand	***	***	***
All import sources	***	***	***
All sources	100.0	100.0	100.0

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

Figure 4.5 Silicon metal: U.S. producers' and U.S. importers' U.S. shipments, by source and product grade, 2024

* * * * * * *

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

Geographical markets

Table 4.9 presents U.S. import quantities of silicon metal sources and border of entry during 2024.[7] According to official U.S. import statistics, imports of silicon metal entered through all four borders of entry, except for Angola (East only) and Laos (all but South).

Table 4.9 Silicon metal: U.S. imports, by source and by border of entry, 2024

Quantity in short tons contained silicon

Source	East	North	South	West	All borders
Angola	1,829	—	—	—	1,829
Australia	9,146	6	942	4,143	14,237
Laos	5,674	21	—	2,798	8,493
Norway	6,057	2,804	5,619	8	14,488
Thailand	2,692	592	296	105	3,686
Subject sources	25,397	3,424	6,858	7,054	42,733
Subject sources less Angola and Thailand	20,876	2,832	6,562	6,948	37,218
Nonsubject sources	18,899	73,882	19,396	6,028	118,206
Nonsubject sources plus Angola and Thailand	23,420	74,474	19,692	6,134	123,720
All import sources	44,296	77,306	26,254	13,082	160,939

Table continued.

[7] The "East" border of entry includes the following Customs entry districts for silicon metal: Baltimore, MD; Charleston, SC; Charlotte, NC; New York, NY; Norfolk, VA; Ogdensburg, NY; Philadelphia, PA; Savannah, GA; and St. Albans, VT. The "North" border of entry includes the following Customs entry districts for silicon metal: Chicago, IL; Cleveland, OH; Detroit, MI; Great Falls, MT; Minneapolis, MN; and St. Louis, MO. The "South" border of entry includes the following Customs entry districts for silicon metal: Dallas-Fort Worth, TX; Houston-Galveston, TX; Miami, FL; New Orleans, LA; and Tampa, FL. The "West" border of entry includes the following Customs entry districts for silicon metal: Los Angeles, CA; San Francisco, CA; and Seattle, WA.

Table 4.9 (continued) Silicon metal: U.S. imports, by source and by border of entry, 2024

Share across in percent

Source	East	North	South	West	All borders
Angola	100.0	—	—	—	100.0
Australia	64.2	0.0	6.6	29.1	100.0
Laos	66.8	0.3	—	32.9	100.0
Norway	41.8	19.4	38.8	0.1	100.0
Thailand	73.0	16.1	8.0	2.9	100.0
Subject sources	59.4	8.0	16.0	16.5	100.0
Subject sources less Angola and Thailand	56.1	7.6	17.6	18.7	100.0
Nonsubject sources	16.0	62.5	16.4	5.1	100.0
Nonsubject sources plus Angola and Thailand	18.9	60.2	15.9	5.0	100.0
All import sources	27.5	48.0	16.3	8.1	100.0

Table continued.

Table 4.9 (continued) Silicon metal: U.S. imports, by source and by border of entry, 2024

Share down in percent

Source	East	North	South	West	All borders
Angola	4.1	—	—	—	1.1
Australia	20.6	0.0	3.6	31.7	8.8
Laos	12.8	0.0	—	21.4	5.3
Norway	13.7	3.6	21.4	0.1	9.0
Thailand	6.1	0.8	1.1	0.8	2.3
Subject sources	57.3	4.4	26.1	53.9	26.6
Subject sources less Angola and Thailand	47.1	3.7	25.0	53.1	23.1
Nonsubject sources	42.7	95.6	73.9	46.1	73.4
Nonsubject sources plus Angola and Thailand	52.9	96.3	75.0	46.9	76.9
All import sources	100.0	100.0	100.0	100.0	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Presence in the market

Table 4.10 and figures 4.6 and 4.7 present monthly official U.S. import statistics for subject countries and nonsubject sources. The monthly import statistics indicate that U.S. imports of silicon metal from Norway were present in every month during the 36-month period. Imports from Australia and Thailand were present in nearly every month during January 2022 to December 2024. Imports from Australia were present in 32 months out of the 36-month period, while imports from Thailand were present in 30 months out of the 36 month period. Imports from Laos were present more than half of the months in the 36-month period, occurring in 25 of the months. Imports from Angola were present in 6 of the 36-month period.

Table 4.10 silicon metal: Quantity of U.S. imports, by source and month

Quantity in short tons contained silicon

Year	Month	Angola	Australia	Laos	Norway	Thailand
2022	January	—	2,564	—	280	812
2022	February	—	—	—	1,574	913
2022	March	—	380	—	685	612
2022	April	—	318	—	1,035	1,998
2022	May	—	284	—	1,958	502
2022	June	—	65	—	881	781
2022	July	—	303	—	1,497	134
2022	August	—	164	—	1,038	439
2022	September	—	—	216	1,558	712
2022	October	—	329	109	1,180	394
2022	November	—	110	324	1,338	526
2022	December	—	415	—	1,599	391
2023	January	—	517	—	1,625	471
2023	February	—	—	—	694	—
2023	March	—	116	152	230	157
2023	April	—	234	503	361	20
2023	May	—	248	219	763	184
2023	June	—	117	220	973	471
2023	July	—	117	384	1,333	470
2023	August	—	641	876	1,336	184
2023	September	—	278	932	152	—
2023	October	—	224	219	985	—
2023	November	—	—	212	946	106
2023	December	—	113	219	939	105

Table continued

Table 4.10 (continued) Silicon metal: U.S. imports, by year, by month, and by source

Quantity in short tons contained silicon

Year	Month	Angola	Australia	Laos	Norway	Thailand
2024	January	—	511	439	1,033	739
2024	February	—	918	548	449	434
2024	March	—	532	79	430	539
2024	April	—	2,410	1,165	572	17
2024	May	—	891	863	162	—
2024	June	105	1,654	439	1,161	421
2024	July	183	2,663	349	1,750	647
2024	August	1,302	526	1,336	1,057	—
2024	September	79	1,968	1,752	1,365	—
2024	October	—	607	349	1,791	296
2024	November	121	648	518	560	148
2024	December	39	908	657	4,158	444
2025	January	554	2,022	756	1,062	—
2025	February	865	311	712	1,865	—
2025	March	210	661	131	3,759	218

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Table 4.10 (continued) Silicon metal: U.S. imports, by month and source

Quantity in short tons contained silicon

Year	Month	Subject sources	Subject sources less Angola and Thailand	Nonsubject sources	Nonsubject sources plus Angola and Thailand	All import sources
2022	January	3,656	2,844	5,911	6,723	9,567
2022	February	2,487	1,574	15,944	16,857	18,431
2022	March	1,677	1,066	12,321	12,933	13,998
2022	April	3,352	1,353	16,321	18,319	19,672
2022	May	2,744	2,242	26,781	27,283	29,525
2022	June	1,727	946	6,412	7,193	8,139
2022	July	1,934	1,799	8,415	8,549	10,348
2022	August	1,641	1,202	8,515	8,954	10,156
2022	September	2,486	1,774	8,390	9,102	10,876
2022	October	2,012	1,619	9,632	10,025	11,644
2022	November	2,297	1,771	9,034	9,559	11,331
2022	December	2,405	2,014	10,311	10,701	12,716
2023	January	2,613	2,142	4,957	5,427	7,569
2023	February	694	694	8,366	8,366	9,060
2023	March	655	498	7,723	7,880	8,378
2023	April	1,118	1,098	8,350	8,370	9,468
2023	May	1,413	1,229	7,123	7,307	8,536
2023	June	1,781	1,310	9,030	9,501	10,810
2023	July	2,304	1,834	9,575	10,045	11,879
2023	August	3,037	2,853	9,308	9,492	12,345
2023	September	1,362	1,362	6,251	6,251	7,613
2023	October	1,428	1,428	4,828	4,828	6,256
2023	November	1,264	1,158	10,088	10,194	11,352
2023	December	1,376	1,271	6,432	6,537	7,808

Table continued.

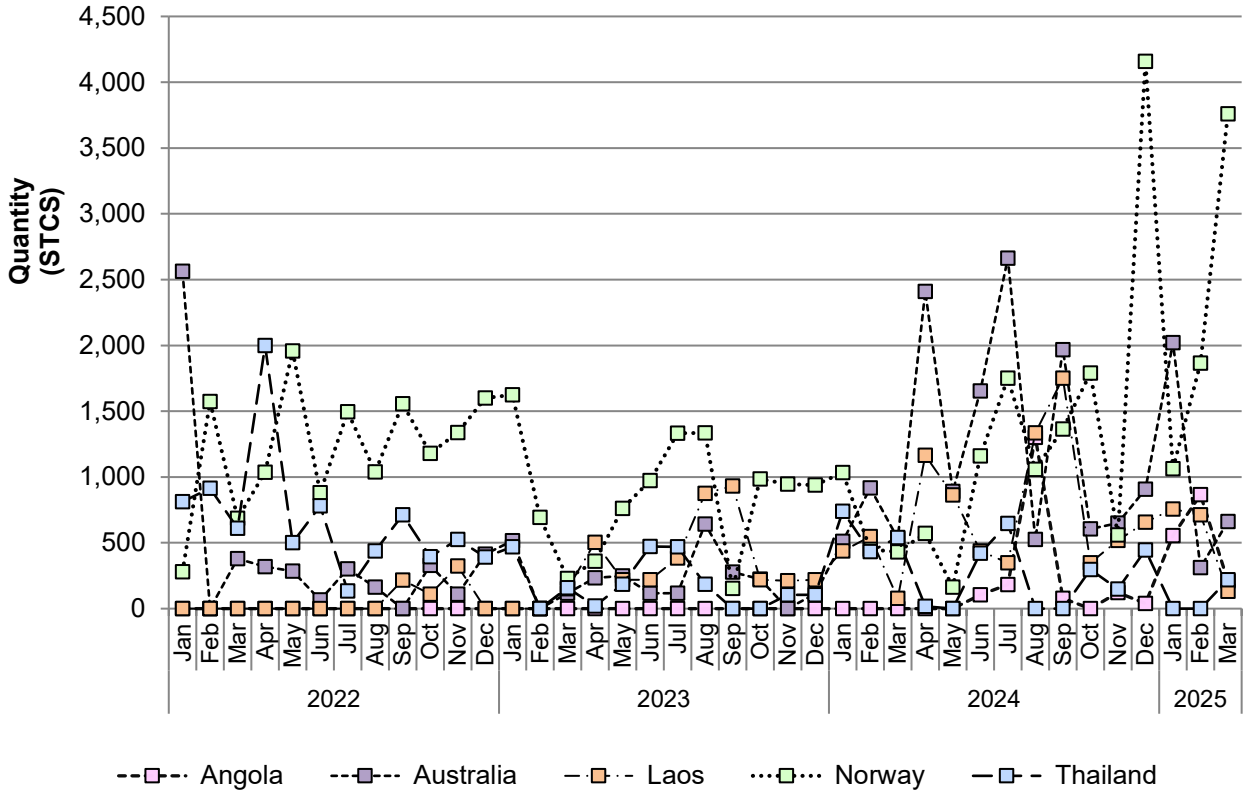
Table 4.10 (continued) Silicon metal: U.S. imports, by year, by month, and by source

Quantity in short tons contained silicon

Year	Month	Subject sources	Subject sources less Angola and Thailand	Nonsubject sources	Nonsubject sources plus Angola and Thailand	All import sources
2024	January	2,723	1,983	7,674	8,413	10,396
2024	February	2,349	1,915	6,906	7,340	9,255
2024	March	1,580	1,040	8,493	9,032	10,073
2024	April	4,164	4,147	12,573	12,590	16,737
2024	May	1,917	1,917	10,895	10,895	12,812
2024	June	3,779	3,253	6,451	6,977	10,230
2024	July	5,592	4,762	14,493	15,323	20,086
2024	August	4,221	2,919	7,982	9,284	12,204
2024	September	5,163	5,085	12,656	12,734	17,819
2024	October	3,043	2,746	7,687	7,984	10,730
2024	November	1,996	1,727	12,170	12,440	14,167
2024	December	6,206	5,723	10,224	10,707	16,430
2025	January	4,394	3,840	15,890	16,444	20,284
2025	February	3,754	2,888	10,829	11,694	14,582
2025	March	4,979	4,550	13,284	13,713	18,263

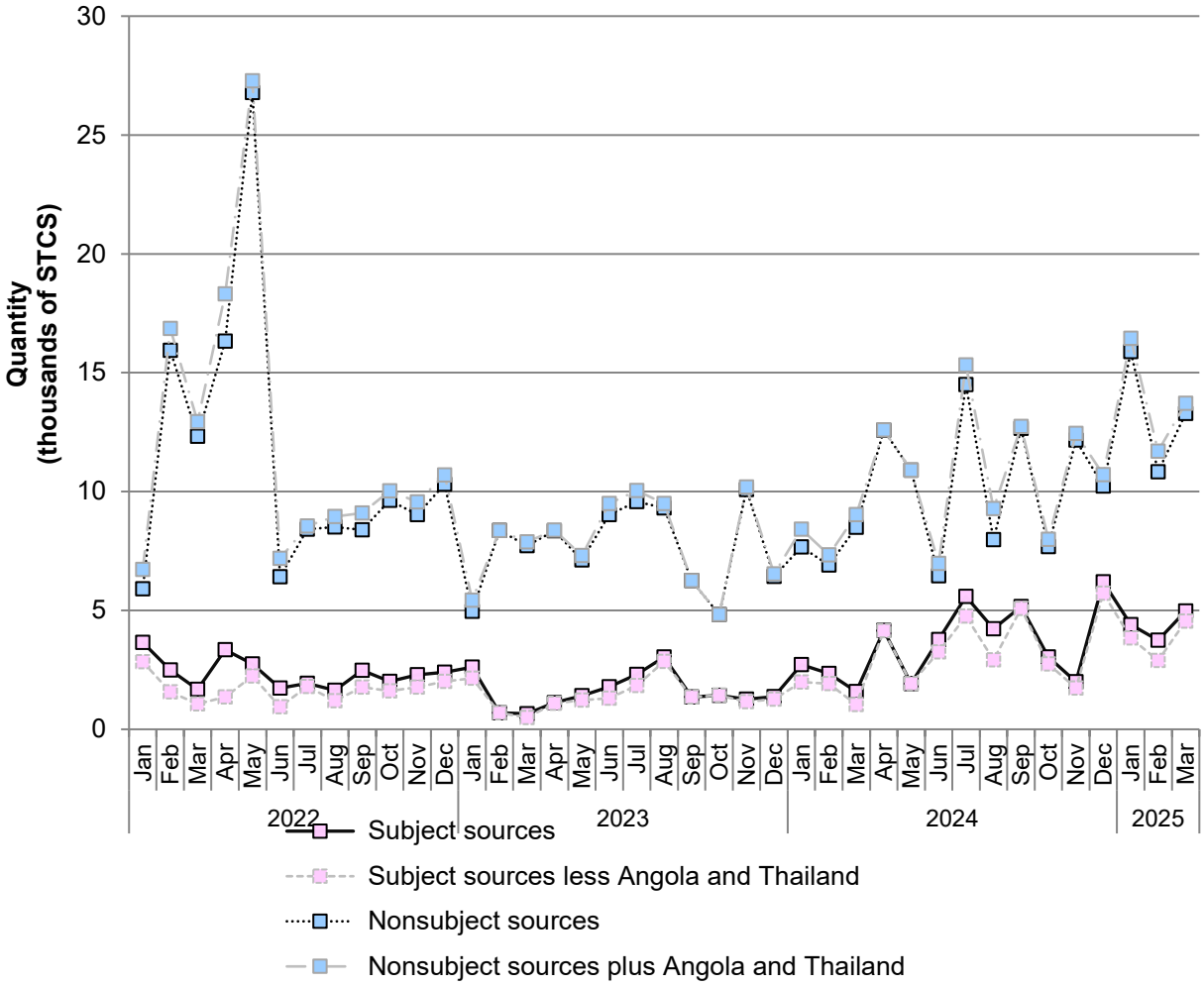
Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series.
Note: Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Figure 4.6 Silicon metal: U.S. imports from individual subject sources, by source and by month



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series.

Figure 4.7 Silicon metal: U.S. imports from aggregated subject and nonsubject sources, by month and negligibility



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series.

Apparent U.S. consumption and market shares

Quantity

Table 4.11 and figure 4.8 presents data on apparent U.S. total market consumption and apparent U.S. market shares by quantity for silicon metal. Declining U.S. producers' U.S. shipments, as discussed in Part 3 of this report, coupled with decreasing U.S. imports of from nonsubject sources resulted in an overall decline in apparent U.S. consumption between 2022 and 2024. During this period, apparent U.S. total market consumption, based on quantity decreased by *** percent.

U.S. producers' share of apparent U.S. consumption, by quantity, declined irregularly from *** percent in 2022 to *** percent in 2024, or by *** percentage points. While over the same period, the share from subject sources increased irregularly, from *** percent to *** percent, or by *** percentage points. The increase in market share from subject sources was largely due to increases from Australia and Laos, as well as from Angola which commenced in 2024. The share of apparent U.S. consumption held by nonsubject imports decreased overall by *** percentage points from 2022 to 2024.

Table 4.11 Silicon metal: Apparent U.S. total market consumption and market shares based on quantity data, by source and period

Quantity in short tons contained silicon; shares in percent

Source	Measure	2022	2023	2024
U.S. producer: Ferroglobe	Quantity	***	***	***
U.S. producer: MS Silicon	Quantity	***	***	***
U.S. producers	Quantity	***	***	***
Angola	Quantity	—	—	1,829
Australia	Quantity	4,933	2,605	14,237
Laos	Quantity	649	3,936	8,493
Norway	Quantity	14,622	10,336	14,488
Thailand	Quantity	8,213	2,168	3,686
Subject sources	Quantity	28,418	19,045	42,733
Subject sources less Angola and Thailand	Quantity	20,204	16,877	37,218
Nonsubject sources	Quantity	137,985	92,029	118,206
Nonsubject sources plus Angola and Thailand	Quantity	146,199	94,197	123,720
All import sources	Quantity	166,403	111,074	160,939
All sources	Quantity	***	***	***
U.S. producer: Ferroglobe	Share	***	***	***
U.S. producer: MS Silicon	Share	***	***	***
U.S. producers	Share	***	***	***
Angola	Share	***	***	***
Australia	Share	***	***	***
Laos	Share	***	***	***
Norway	Share	***	***	***
Thailand	Share	***	***	***
Subject sources	Share	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***
Nonsubject sources	Share	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Figure 4.8 Silicon metal: Apparent U.S. total market consumption based on quantity data, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series.

Table 4.12 and figure 4.9 present data on apparent U.S. merchant market consumption and market shares based on quantity data for silicon metal. During 2022 to2024, the apparent U.S. merchant market consumption, based on quantity decreased by *** percent.

U.S. producers' share of apparent U.S. consumption declined irregularly from *** percent in 2022 to *** percent in 2024, or by *** percentage points. Over the same period, the share from subject sources increased irregularly from *** percent to *** percent, or by *** percentage points.

Table 4.12 Silicon metal: Apparent U.S. merchant market consumption and market shares based on quantity data, by source and period

Quantity in short tons contained silicon; shares in percent

Source	Measure	2022	2023	2024
U.S. producer: Ferroglobe	Quantity	***	***	***
U.S. producer: MS Silicon	Quantity	***	***	***
U.S. producers	Quantity	***	***	***
Angola	Quantity	—	—	1,829
Australia	Quantity	4,933	2,605	14,237
Laos	Quantity	649	3,936	8,493
Norway	Quantity	14,622	10,336	14,488
Thailand	Quantity	8,213	2,168	3,686
Subject sources	Quantity	28,418	19,045	42,733
Subject sources less Angola and Thailand	Quantity	20,204	16,877	37,218
Nonsubject sources	Quantity	137,985	92,029	118,206
Nonsubject sources plus Angola and Thailand	Quantity	146,199	94,197	123,720
All import sources	Quantity	166,403	111,074	160,939
All sources	Quantity	***	***	***
U.S. producer: Ferroglobe	Share	***	***	***
U.S. producer: MS Silicon	Share	***	***	***
U.S. producers	Share	***	***	***
Angola	Share	***	***	***
Australia	Share	***	***	***
Laos	Share	***	***	***
Norway	Share	***	***	***
Thailand	Share	***	***	***
Subject sources	Share	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***
Nonsubject sources	Share	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Figure 4.9 Silicon metal: Apparent U.S. merchant market consumption based on quantity data, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series.

Value

Table 4.13 and figure 4.10 present data on apparent U.S. total market consumption and U.S. total market shares by value for silicon metal. During 2022 to 2024, U.S. apparent total market consumption, based on value, decreased by *** percent.

U.S. producers' share of apparent U.S. consumption, by value, declined irregularly from *** percent in 2022 to *** percent in 2024, or by *** percentage points. Over the same period, the share from subject sources increased irregularly, from *** percent to *** percent, or by *** percentage points.

Table 4.13 Silicon metal: Apparent U.S. total market consumption and market shares based on value data, by source and period

Value in 1,000 dollars; shares in percent

Source	Measure	2022	2023	2024
U.S. producer: Ferroglobe	Value	***	***	***
U.S. producer: MS Silicon	Value	***	***	***
U.S. producers	Value	***	***	***
Angola	Value	—	—	4,226
Australia	Value	19,696	9,954	45,598
Laos	Value	1,958	9,790	18,868
Norway	Value	85,717	44,214	45,055
Thailand	Value	32,569	6,784	9,305
Subject sources	Value	139,940	70,743	123,052
Subject sources less Angola and Thailand	Value	107,371	63,958	109,521
Nonsubject sources	Value	616,163	372,248	355,283
Nonsubject sources plus Angola and Thailand	Value	648,732	379,032	368,814
All import sources	Value	756,103	442,991	478,335
All sources	Value	***	***	***
U.S. producer: Ferroglobe	Share	***	***	***
U.S. producer: MS Silicon	Share	***	***	***
U.S. producers	Share	***	***	***
Angola	Share	***	***	***
Australia	Share	***	***	***
Laos	Share	***	***	***
Norway	Share	***	***	***
Thailand	Share	***	***	***
Subject sources	Share	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***
Nonsubject sources	Share	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Import value data reflect CIF values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Figure 4.10 Silicon metal: Apparent U.S. total market consumption based on value data, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Import value data reflect CIF values.

Table 4.14 and figure 4.11 presents data on apparent U.S. merchant market consumption and U.S. merchant market shares by value for silicon metal. During 2022 through 2024, apparent U.S. merchant market consumption, based on value, decreased by *** percent. U.S. producers' market share of apparent U.S. merchant market consumption fluctuated but ended *** percentage points lower in 2024 than in 2022, while the share of apparent U.S. consumption held by subject imports increased overall by *** percentage points.

Table 4.14 Silicon metal: Apparent U.S. merchant market consumption and market shares based on value data, by source and period

Value in 1,000 dollars; shares in percent

Source	Measure	2022	2023	2024
U.S. producer: Ferroglobe	Value	***	***	***
U.S. producer: MS Silicon	Value	***	***	***
U.S. producers	Value	***	***	***
Angola	Value	—	—	4,226
Australia	Value	19,696	9,954	45,598
Laos	Value	1,958	9,790	18,868
Norway	Value	85,717	44,214	45,055
Thailand	Value	32,569	6,784	9,305
Subject sources	Value	139,940	70,743	123,052
Subject sources less Angola and Thailand	Value	107,371	63,958	109,521
Nonsubject sources	Value	616,163	372,248	355,283
Nonsubject sources plus Angola and Thailand	Value	648,732	379,032	368,814
All import sources	Value	756,103	442,991	478,335
All sources	Value	***	***	***
U.S. producer: Ferroglobe	Share	***	***	***
U.S. producer: MS Silicon	Share	***	***	***
U.S. producers	Share	***	***	***
Angola	Share	***	***	***
Australia	Share	***	***	***
Laos	Share	***	***	***
Norway	Share	***	***	***
Thailand	Share	***	***	***
Subject sources	Share	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***
Nonsubject sources	Share	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Import value data reflect CIF values

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Figure 4.11 Silicon metal: Apparent U.S. merchant market consumption based on value data, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Import value data reflect CIF values

Part 5: Pricing data

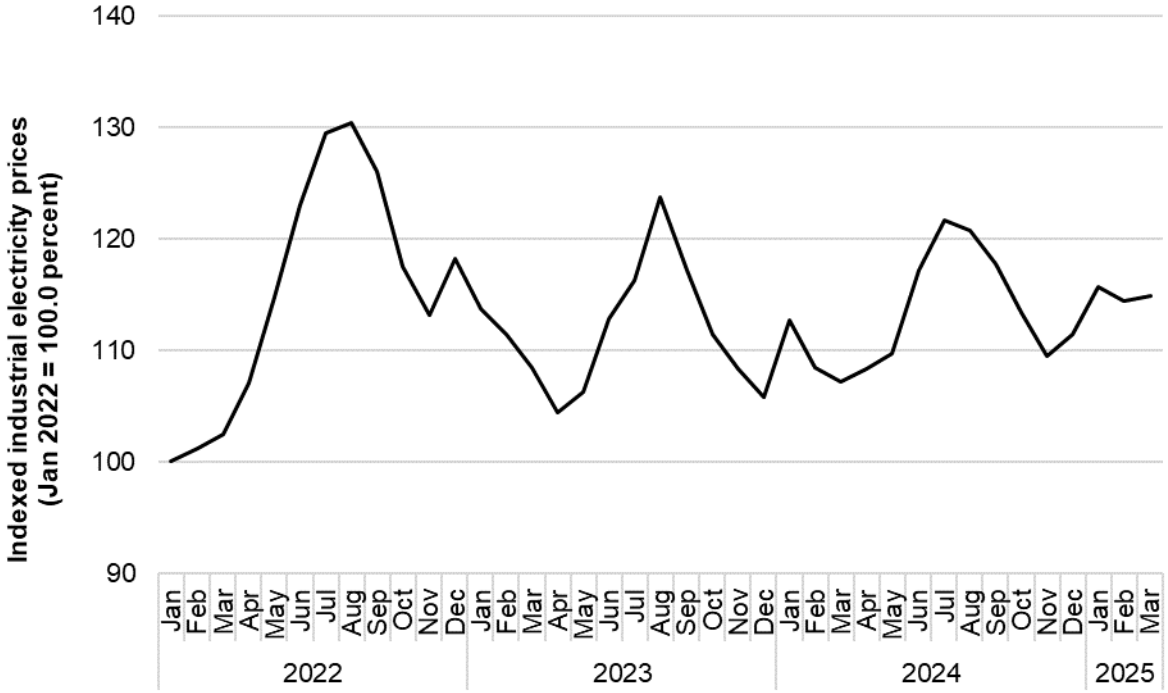
Factors affecting prices

Raw material costs

Silicon metal is produced from mined quartzite and consists almost entirely of elemental silicon with very small amounts of impurities (such as iron, calcium, and aluminum). U.S. producers reported that raw materials as a share of cost of goods sold increased from *** percent in 2022 to *** percent in 2024.

The cost of electricity is another important cost in the production of silicon metal. Electricity prices fluctuate over the year, typically reaching their peak in the summer. Overall, the average industrial retail price of electricity increased by 14.9 percent from January 2022 to March 2025 (figure 5.1 and table 5.1).

Figure 5.1 Raw materials: U.S. average retail price of electricity, industrial, monthly, January 2022-March 2025



Source: U.S. Energy Information Administration, "Electricity Data Browser" (https://www.eia.gov/electricity/data/browser/#/topic/7?agg=0,1&geo=g&endsec=vg&linechart=~~~ELEC.PRICE.US-IND.M&columnchart=ELEC.PRICE.US-ALL.M~ELEC.PRICE.US-RES.M~ELEC.PRICE.US-COM.M~ELEC.PRICE.US-IND.M&map=ELEC.PRICE.US-ALL.M&freq=M&start=202201&end=202503&ctype=linechart&ltype=pin&rtype=s&pin=&rse=0&maptype=0), retrieved May 22, 2025.

Table 5.1 Raw materials: U.S. average retail price of electricity, industrial, monthly, January 2022-March 2025

Index in percent, Jan 2022 = 100.0 percent

Month	2022	2023	2024	2025
January	100.0	113.8	112.7	115.7
February	101.3	111.4	108.5	114.5
March	102.5	108.5	107.2	114.9
April	107.1	104.5	108.3	NA
May	114.7	106.3	109.7	NA
June	123.1	112.8	117.2	NA
July	129.5	116.3	121.7	NA
August	130.5	123.8	120.7	NA
September	126.0	117.2	117.8	NA
October	117.5	111.4	113.4	NA
November	113.2	108.3	109.5	NA
December	118.2	105.8	111.4	NA

Source: Data series from U.S. Energy Information Administration, "Electricity Data Browser" (https://www.eia.gov/electricity/data/browser/#/topic/7?agg=0,1&geo=g&endsec=vg&linechart=~~~ELEC.PRICE.US-IND.M&columnchart=ELEC.PRICE.US-ALL.M~ELEC.PRICE.US-RES.M~ELEC.PRICE.US-COM.M~ELEC.PRICE.US-IND.M&map=ELEC.PRICE.US-ALL.M&freq=M&start=202201&end=202503&ctype=linechart&ltype=pin&rtype=s&pin=&rse=0&maptype=0), retrieved May 22, 2025.

Transportation costs to the U.S. market

Transportation costs for silicon metal shipped from subject countries to the United States averaged 1.8 percent of c.i.f. value of imports from Angola, 2.9 percent of imports from Australia, 4.7 percent of imports from Laos, 3.1 percent of imports from Norway, and 3.9 percent of imports from Thailand during 2024. These estimates were derived from official import data and represent the transportation and other charges on imports.[1]

U.S. inland transportation costs

*** responding U.S. producers and most importers (5 of 6) reported that they typically arrange transportation to their customers. U.S. producers reported that their U.S. inland transportation costs ranged from *** percent to *** percent while importers reported costs of 1.0 to 4.0 percent.

[1] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2024 and then dividing by the customs value based on the HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000.

Pricing practices

Pricing methods

U.S. producers reported setting prices using *** and U.S. importers reported using primarily transaction-by-transaction negotiations and contracts (table 5.2). *** and importer *** reported using published prices and set price lists.

Table 5.2 Silicon metal: Count of U.S. producers' and importers' reported price setting methods

Method	U.S. producers	U.S. importers
Transaction-by-transaction	***	5
Contract	***	6
Set price list	***	1
Other	***	1
Responding firms	2	7

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

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.

U.S. producers reported selling *** of their silicon metal through annual contracts and importers reported selling *** of their silicon metal through annual contracts, and also reported selling *** through short- and long-term contracts and on the spot market (table 5.3).[2]

Table 5.3 Silicon metal: U.S. producers' and importers' shares of commercial U.S. shipments by type of sale, 2024

Share in percent

Sale type	U.S. producers	Subject U.S. importers
Long-term contracts	***	***
Annual contract	***	***
Short-term contracts	***	***
Spot sales	***	***
All sales types	100.0	100.0

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

Note: Because of rounding, figures may not add to the totals shown.

[2] Importers reported short-term contracts ranging from 45 to 180 days, and importer *** reported long term contracts of *** days.

U.S. producers reported that their annual contracts *** for price renegotiation, fix *** (and in the case of ***, fix quantity as well), *** to raw material costs, but silicon metal prices are set using indices such as the CRU's Monitor or Platts' Metals Week silicon metal price indices.[3]

Sales terms and discounts

*** U.S. producers and most importers typically quote prices on a delivered basis. *** U.S. producers and most importers reported that they did not have a specific discount policy. Importer *** reported offering a 1.5 percent prompt payment discount.

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 silicon metal products shipped to unrelated U.S. customers during January 2022 to December 2024.

Product 1.-- Sold to primary aluminum producers; silicon metal less than 99.99% pure that contains a minimum of 98.5% silicon, a maximum of 1.00% iron, a maximum of 0.07% calcium, and no restriction of the aluminum content.

Product 2.-- Sold to secondary aluminum producers; silicon metal less than 99.99% pure that contains a minimum of 97.0% silicon, a maximum of 2.00% iron, a maximum of 0.4% calcium, and no restriction of the aluminum content.

Product 3.-- Sold to chemical and/or polysilicon manufacturers; silicon metal less than 99.99% pure that contains a minimum of 98.0% silicon, a maximum of 1.50% iron, a maximum of 0.2% calcium, and a maximum of 0.4% aluminum.

[3] Preliminary conference transcript, p. 22.

*** U.S. producers and three importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[4] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' U.S. shipments of silicon metal, *** percent of U.S. shipments of subject imports from Australia, *** percent of U.S. shipments of subject imports from Laos, *** percent of U.S. shipments of subject imports from Norway in 2024, and *** percent of U.S. shipments of subject imports from Thailand in 2024.[5] Price data for products 1 to 3 are presented in tables 5.4 to 5.6 and figures 5.2 to 5.4.[6]

Table 5.4 Silicon metal: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by source and quarter

Price in dollars per short ton contained silicon contained silicon, quantity in short tons contained silicon, margin in percent.

Period	U.S. price	U.S. quantity	Australia price	Australia quantity	Australia margin	Laos price	Laos quantity	Laos margin
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

Table continued.

[4] 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.

[5] Pricing coverage is based on U.S. shipments reported in questionnaires. No importers reported price data of silicon metal imported from Angola.

[6] A null value is reported as "—" in the tables of this section.

Table 5.4 (Continued) Silicon metal: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by source and quarter

Price in dollars per short ton contained silicon contained silicon, quantity in short tons contained silicon, margin in percent

Period	Norway price	Norway quantity	Norway margin	Thailand price	Thailand quantity	Thailand margin	Subject sources price	Subject sources quantity	Subject sources margin
2022 Q1	***	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***	***

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

Note: Product 1: Sold to primary aluminum producers; silicon metal less than 99.99% pure that contains a minimum of 98.5% silicon, a maximum of 1.00% iron, a maximum of 0.07% calcium, and no restriction of the aluminum content.

Figure 5.2 Silicon metal: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by source and quarter

Price of product 1

* * * * * * * * *

Volume of product 1

* * * * * * * * *

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

Note: Product 1: Sold to primary aluminum producers; silicon metal less than 99.99% pure that contains a minimum of 98.5% silicon, a maximum of 1.00% iron, a maximum of 0.07% calcium, and no restriction of the aluminum content.

Table 5.5 Silicon metal: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by source and quarter

Price in dollars per short ton contained silicon, quantity in short tons contained silicon, margin in percent.

Period	U.S. price	U.S. quantity	Australia price	Australia quantity	Australia margin	Laos price	Laos quantity	Laos margin
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

Table continued.

Table 5.5 (Continued) Silicon metal: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by source and quarter

Price in dollars per short ton contained silicon contained silicon, quantity in short tons contained silicon, margin in percent

Period	Norway price	Norway quantity	Norway margin	Thailand price	Thailand quantity	Thailand margin	Subject sources price	Subject sources quantity	Subject sources margin
2022 Q1	***	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***	***

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

Note: Product 2: Sold to secondary aluminum producers; silicon metal less than 99.99% pure that contains a minimum of 97.0% silicon, a maximum of 2.00% iron, a maximum of 0.4% calcium, and no restriction of the aluminum content.

Figure 5.3 silicon metal: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by source and quarter

Price of product 2

* * * * * * * * *

Volume of product 2

* * * * * * * * *

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

Note: Product 2: Sold to secondary aluminum producers; silicon metal less than 99.99% pure that contains a minimum of 97.0% silicon, a maximum of 2.00% iron, a maximum of 0.4% calcium, and no restriction of the aluminum content.

Table 5.6 Silicon metal: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by source and quarter

Price in dollars per short ton contained silicon, quantity in short tons contained silicon, margin in percent.

Period	U.S. price	U.S. quantity	Australia price	Australia quantity	Australia margin	Laos price	Laos quantity	Laos margin
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

Table continued.

Table 5.6 (Continued) Silicon metal: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by source and quarter

Price in dollars per short ton contained silicon contained silicon, quantity in short tons contained silicon, margin in percent

Period	Norway price	Norway quantity	Norway margin	Thailand price	Thailand quantity	Thailand margin	Subject sources price	Subject sources quantity	Subject sources margin
2022 Q1	***	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***	***

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

Note: Product 3: Sold to chemical and/or polysilicon manufacturers; silicon metal less than 99.99% pure that contains a minimum of 98.0% silicon, a maximum of 1.50% iron, a maximum of 0.2% calcium, and a maximum of 0.4% aluminum.

Figure 5.4 Silicon metal: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, by source and quarter

Price of product 3

* * * * * * * * *

Volume of product 3

* * * * * * * * *

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

Note: Product 3: Sold to chemical and/or polysilicon manufacturers; silicon metal less than 99.99% pure that contains a minimum of 98.0% silicon, a maximum of 1.50% iron, a maximum of 0.2% calcium, and a maximum of 0.4% aluminum.

Price trends

In general, prices decreased during January 2022 to December 2024. Table 5.7 summarizes the price trends, by country and by product. As shown in the table, domestic price decreases ranged from *** percent to *** percent during January 2022 to December 2024 while import price decreases ranged from *** percent to *** percent.

Table 5.7 Silicon metal: Summary of price data, by product and source, January 2022 to December 2024

Quantity in short ton contained silicon, price in dollars per short tons contained silicon

Product	Source	Number of quarters	Quantity of shipments	Low price	High price	First quarter price	Last quarter price	Percent change in price over period
Product 1	United States	12	***	***	***	***	***	***
Product 1	Angola	—	***	***	***	***	***	***
Product 1	Australia	9	***	***	***	***	***	***
Product 1	Laos	—	***	***	***	***	***	***
Product 1	Norway	—	***	***	***	***	***	***
Product 1	Thailand	—	***	***	***	***	***	***
Product 2	United States	12	***	***	***	***	***	***
Product 2	Angola	—	***	***	***	***	***	***
Product 2	Australia	12	***	***	***	***	***	***
Product 2	Laos	4	***	***	***	***	***	***
Product 2	Norway	12	***	***	***	***	***	***
Product 2	Thailand	12	***	***	***	***	***	***
Product 3	United States	12	***	***	***	***	***	***
Product 3	Angola	—	***	***	***	***	***	***
Product 3	Australia	6	***	***	***	***	***	***
Product 3	Laos	—	***	***	***	***	***	***
Product 3	Norway	—	***	***	***	***	***	***
Product 3	Thailand	—	***	***	***	***	***	***

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

Note: Percent change column is percentage change from the first quarter 2022 to the last quarter in 2024.

Price comparisons

As shown in tables 5.8 through 5.9, prices for silicon metal imported from subject sources were below those for U.S.-produced silicon metal in 29 of 55 instances (*** short tons contained silicon) and margins of underselling ranged from *** to *** percent. In the remaining instances (and the majority of comparisons by quantity, *** short tons contained silicon), prices for product from subject sources was *** to *** percent above prices for the domestic product. Table 5.8 presents price comparisons by product, table 5.9 by source, and table 5.10 by year. There are no price comparisons available for Angola.

Table 5.8 Silicon metal: Instances of underselling and overselling and the range and average of margins, by product

Quantity in short tons contained silicon; margin in percent

Product	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	7	***	***	***	***
Product 2	Underselling	18	***	***	***	***
Product 3	Underselling	4	***	***	***	***
All products	Underselling	29	***	***	***	***
Product 1	Overselling	2	***	***	***	***
Product 2	Overselling	22	***	***	***	***
Product 3	Overselling	2	***	***	***	***
All products	Overselling	26	***	***	***	***

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

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

Table 5.9 Silicon metal: Instances of underselling and overselling and the range and average of margins, by product, for subject countries less Angola and Thailand

Quantity in short tons contained silicon; margin in percent

Product	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	7	***	***	***	***
Product 2	Underselling	10	***	***	***	***
Product 3	Underselling	4	***	***	***	***
All products	Underselling	21	***	***	***	***
Product 1	Overselling	2	***	***	***	***
Product 2	Overselling	18	***	***	***	***
Product 3	Overselling	2	***	***	***	***
All products	Overselling	22	***	***	***	***

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

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

As shown in table 5.9, prices for product imported from Australia were below those for U.S.-produced product in 14 of 27 instances (*** short tons); margins of underselling ranged from *** to *** percent. In the remaining 13 instances (*** short tons), prices for product from Australia were between *** to *** percent above prices for the domestic product. Prices for product imported from Laos were below those for U.S.-produced product in *** instances (*** short tons); margins of underselling ranged from *** to *** percent. Prices for product imported from Thailand were below those for U.S.-produced product in 8 of 12 instances (*** short tons); margins of underselling ranged from *** to *** percent. In the remaining four instances (and the majority of quantity, *** short tons), prices for product from Thailand were between *** and *** percent above prices for the domestic product.

Prices for product imported from Norway were above those for U.S.-produced product in 9 of 12 instances (*** short tons); prices for product from Norway were between *** and *** percent above prices for the domestic product. In the remaining three instances (*** short tons) and margins of underselling ranged from *** to *** percent.

Table 5.10 Silicon metal: Instances of underselling and overselling and the range and average of margins, by source

Quantity in short tons contained silicon; margin in percent

Source	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Angola	Underselling	—	—	—	—	—
Australia	Underselling	14	***	***	***	***
Laos	Underselling	4	***	***	***	***
Norway	Underselling	3	***	***	***	***
Thailand	Underselling	8	***	***	***	***
Subject sources	Underselling	29	***	***	***	***
Subject sources less Angola and Thailand	Underselling	21	***	***	***	***
Angola	Overselling	—	***	***	***	***
Australia	Overselling	13	***	***	***	***
Laos	Overselling	—	***	***	***	***
Norway	Overselling	9	***	***	***	***
Thailand	Overselling	4	***	***	***	***
Subject sources	Overselling	26	***	***	***	***
Subject sources less Angola and Thailand	Overselling	22	***	***	***	***

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

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

As shown in table 5.11 and 5.12, most instances of overselling occurred during 2022. Instances of overselling decreased in 2023, but the quantities of silicon metal from subject sources sold above U.S. prices were still greater than those sold below prices for U.S.-produced silicon metal. Most underselling, by both instance and quantity, occurred in 2024.

Table 5.11 Silicon metal: Instances of underselling and overselling and the range and average of margins, by year

Quantity in short tons contained silicon; margin in percent

Year	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
2022	Underselling	1	***	***	***	***
2023	Underselling	11	***	***	***	***
2024	Underselling	17	***	***	***	***
All periods	Underselling	29	***	***	***	***
2022	Overselling	14	***	***	***	***
2023	Overselling	6	***	***	***	***
2024	Overselling	6	***	***	***	***
All periods	Overselling	26	***	***	***	***

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

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

Table 5.12 Silicon metal: Instances of underselling and overselling and the range and average of margins, by year, for subject sources less Angola and Thailand

Quantity in short tons contained silicon; margin in percent

Year	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
2022	Underselling	1	***	***	***	***
2023	Underselling	7	***	***	***	***
2024	Underselling	13	***	***	***	***
All periods	Underselling	21	***	***	***	***
2022	Overselling	10	***	***	***	***
2023	Overselling	6	***	***	***	***
2024	Overselling	6	***	***	***	***
All periods	Overselling	22	***	***	***	***

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

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

Lost sales and lost revenue

The Commission requested that U.S. producers of silicon metal report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of silicon metal from Angola, Australia, Laos, Norway, and Thailand during January 2022 to December 2024. Of the two responding U.S. producers, *** reported that *** had to reduce prices, *** reported that *** had to roll back announced price increases, and *** reported that *** had lost sales. *** U.S. producers submitted lost sales and lost revenue allegations and identified 27 firms with which they lost sales or revenue (*** consisting lost sales allegations, *** consisting of lost revenue allegations, and *** consisting of both types of allegations, including several firms that ***). Submitted allegations covered all subject countries and all years during the period of investigation.

Staff contacted 27 purchasers and received responses from 16 purchasers. Responding purchasers reported purchasing *** short tons (including their reported imports) of silicon metal during January 2022 to December 2024 (table 5.13).

Table 5.13 Silicon metal: Purchasers' reported purchases and imports, by firm and source

Quantity in short tons contained silicon, share in percent

Purchaser	Domestic quantity	Subject quantity	All other quantity	Change in domestic share	Change in subject country share	Change in all other share
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
All firms	***	***	***	***	***	***

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

Note: In addition, ***. Email correspondence with ***, May 19, 2025

Note: All other includes all other sources and unknown sources. Change is the percentage point change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.

During 2024, responding purchasers purchased and imported *** percent from U.S. producers, *** percent from Australia, *** percent from Laos, *** percent from Norway, and *** percent from Thailand. No responding purchasers reported purchasing or importing from Angola. Responding purchasers purchased or imported *** percent from nonsubject countries, and *** percent from "unknown source" countries.

Purchasers were asked about changes in their purchasing patterns from different sources since 2022. Of the responding purchasers, seven reported decreasing (or fluctuating down) purchases from domestic producers, six reported increasing (or fluctuating up) purchases, and three reported no change. No purchasers reported that they did not purchase any domestic product (table 5.14).[7] Explanations for increasing purchases of domestic product included pricing, quality, reliability, geographic proximity, deep commitment to Buy American, a new plant start up in Washington, and global supply chain uncertainty. Explanations for decreasing purchases of domestic product included pricing, decreased firm-level demand, inability for U.S. suppliers to meet a firm's full specifications (packaging requirements), and reliability and availability concerns.

Table 5.14 Silicon metal: Count of changes in purchase patterns from U.S., subject, and nonsubject countries

Count in number of firms reporting

Source of purchases	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease	Did not purchase
United States	3	3	3	6	1	0
Angola	0	0	0	0	0	12
Australia	1	3	0	1	1	7
Laos	0	0	1	1	0	10
Norway	2	3	1	2	1	5
Thailand	0	2	1	2	1	7
Nonsubject sources	3	3	0	4	1	3
Sources unknown	0	0	2	1	1	6

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

Of the 14 responding purchasers, 9 reported that, since 2022, they had purchased imported silicon metal from Angola, Australia, Laos, Norway, or Thailand instead of U.S.-produced product. Seven of these purchasers reported that subject import prices were lower than U.S.-produced product, and four of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Four purchasers estimated the quantity of silicon metal from Angola, Australia, Laos, Norway, and Thailand purchased instead of domestic product; quantities ranged from *** short tons to *** short tons (tables 5.15 and 5.16). Purchasers identified supply diversification, low contaminants in raw materials, purchaser requirements, and availability of supply as non-price reasons for purchasing imported rather than U.S.-produced product.

[7] Of the 16 responding purchasers, 3 purchasers indicated that they did not know the source of some of the silicon metal they purchased.

Of the 10 responding purchasers, one reported that U.S. producers had reduced prices in order to compete with lower-priced imports from Angola, Australia, Laos, Norway, and Thailand; six reported that they did not know. The reported estimated price reduction was 10 percent (table 5.17).

Table 5.15 Silicon metal: Purchasers' responses to purchasing subject imports instead of domestic product, by source

Quantity in short tons contained silicon

Source	Count of purchasers reporting subject instead of domestic	Count of purchasers reported that imports were priced lower	Count of purchasers reporting that price was a primary reason for shift	Quantity
Angola	0	0	0	***
Australia	5	4	3	***
Laos	1	1	1	***
Norway	7	5	2	***
Thailand	5	4	2	***
Subject sources	9	7	4	***
Subject sources less Angola and Thailand	9	7	4	***

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

Table 5.16 Silicon metal: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in short tons contained silicon

Purchaser	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***

Table continued.

Table 5.16 (Continued) Silicon metal: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in short tons contained silicon

Purchaser	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
*** (continued)					***
***	***	***	***	***	***

Table continued.

Table 5.16 (Continued) Silicon metal: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in short tons contained silicon

Purchaser	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	Yes: 9, No: 5	Yes: 7, No: 2	Yes: 4, No: 5	***	

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

Table 5.17 Silicon metal: Purchasers' responses to U.S. producer price reductions, by firm

Purchaser	Reported producers lowered prices	Estimated percent of U.S. price reduction	Explanation
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
All firms	Yes: 1, No: 9	***	NA

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

Table 5.18 Silicon metal: Purchasers' responses to U.S. producer price reductions, by source

Source	Count of purchasers reporting U.S. producers reduced prices	Average percent of estimated U.S. price reduction	Range of percent of estimated U.S. price reductions
Angola	0	***	***
Australia	0	***	***
Laos	0	***	***
Norway	1	***	***
Thailand	0	***	***
Subject sources	1	***	***
Subject sources less Angola and Thailand	1	***	***

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

Part 6: Financial experience of U.S. producers

Background[1]

Two U.S. producers provided usable financial results on their silicon metal operations.[2] During the three-year period 2022 through 2024, Ferroglobe accounted for *** percent of total silicon metal sales quantity and MS Silicon accounted for *** percent.[3]

Events impacting the silicon metal operations of U.S. producers include ***.[4] When considering open market operations (i.e., operations reflecting only commercial sales), *** accounted for *** percent and *** accounted for *** of net sales quantity from 2022 to 2024.[5]

Figure 6.1 presents each responding firm's share of the total reported net sales quantity in 2024.

[1] The following abbreviations are used in the tables and/or text of this section: generally accepted accounting principles ("GAAP"), international financial reporting standings (IFRS), period of investigation (POI, 2022 to 2024 for these investigations) fiscal year ("FY"), net sales ("NS"), cost of goods sold ("COGS"), selling, general, and administrative expenses ("SG&A expenses"), average unit values ("AUVs"), research and development expenses ("R&D expenses"), and return on assets ("ROA").

[2] Both U.S. producers reported financial results on the basis of the calendar year. ***.

[3] Ferroglobe PLC, the parent of petitioner Ferroglobe USA, is a global company, with operations in multiple countries, including the United States, South Africa, France, Spain, and Canada. Conference transcript, p. 19 (Chaal) and p. 11 (Stoel). "Industrial Footprint," Ferroglobe company website, accessed June 2, 2025. https://www.ferroglobe.com/about-ferroglobe/industrial-footprint. Approximately 27.2 percent of the company's 1.2 million tons of production capacity is dedicated to silicon metal, with the remainder dedicated to production of manganese-based alloys and other silicon-based alloys. Ferroglobe PLC for 20-F, filed April 25, 2025, p. 18.

[4] ***. *** U.S. producer questionnaire, response, section 2.2. Ferroglobe closed its Selma, Alabama plant, in October 2023. Conference transcript, p. 24 (Chaal).

[5] U.S. producers vary in terms of their focus on commercial sales versus transfers. ***. *** U.S. producers' questionnaires, responses to 3.9a.

Figure 6.1 Silicon metal: U.S. producers' share of net sales quantity in 2024, by firm

* * * * * * *

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

Operations on Silicon metal

Table 6.1 presents aggregated data on U.S. producers' total market operations in relation to silicon metal, while table 6.2 presents corresponding changes in AUVs. Financial results for the merchant market are presented in table 6.3, and table 6.4 presents the corresponding changes in AUVs. Table 6.5 presents selected total market company-specific financial data.

Table 6.1 Silicon metal: U.S. producers' results of total market operations, by item and period

Quantity in short tons contained silicon (STCS); value in 1,000 dollars; ratios in percent

Item	Measure	2022	2023	2024
Commercial sales	Quantity	***	***	***
Transfers to related firms	Quantity	***	***	***
Total net sales	Quantity	***	***	***
Commercial sales	Value	***	***	***
Transfers to related firms	Value	***	***	***
Total net sales	Value	***	***	***
COGS: Raw materials	Value	***	***	***
COGS: Electricity	Value	***	***	***
COGS: Direct labor	Value	***	***	***
COGS: Other factory	Value	***	***	***
COGS: Less byproduct revenue	Value	***	***	***
COGS: Total	Value	***	***	***
Gross profit or (loss)	Value	***	***	***
SG&A expenses	Value	***	***	***
Operating income or (loss)	Value	***	***	***
Interest expense	Value	***	***	***
Other expense/(income)	Value	***	***	***
Net income or (loss)	Value	***	***	***
Depreciation/amortization	Value	***	***	***
Cash flow	Value	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***
COGS: Electricity	Ratio to NS	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***
COGS: Other factory	Ratio to NS	***	***	***
COGS: Less byproduct revenue	Ratio to NS	***	***	***
COGS: Total	Ratio to NS	***	***	***
Gross profit	Ratio to NS	***	***	***
SG&A expense	Ratio to NS	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***
Net income or (loss)	Ratio to NS	***	***	***

Table continued.

Table 6.1 (Continued) Silicon metal: U.S. producers' results of total market operations, by item and period

Shares in percent; unit values in dollars per STCS; count in number of firms reporting

Item	Measure	2022	2023	2024
COGS: Raw materials	Share	***	***	***
COGS: Electricity	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Total	Share	100.0	100.0	100.0
Commercial sales	Unit value	***	***	***
Transfers to related firms	Unit value	***	***	***
Total net sales	Unit value	***	***	***
COGS: Raw materials	Unit value	***	***	***
COGS: Electricity	Unit value	***	***	***
COGS: Direct labor	Unit value	***	***	***
COGS: Other factory	Unit value	***	***	***
COGS: Less byproduct revenue	Unit value	***	***	***
COGS: Total	Unit value	***	***	***
Gross profit or (loss)	Unit value	***	***	***
SG&A expenses	Unit value	***	***	***
Operating income or (loss)	Unit value	***	***	***
Net income or (loss)	Unit value	***	***	***
Operating losses	Count	***	***	***
Net losses	Count	***	***	***
Data	Count	2	2	2

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

Note: Shares represent the share of COGS before the byproduct revenue offset. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Table 6.2 Silicon metal: Changes in AUVs between comparison periods for the total market

Changes in percent

Item	2022–24	2022–23	2023–24
Commercial sales	▼***	▼***	▼***
Transfers to related firms and joint venture partners	▲***	▲***	▼***
Total net sales	▼***	▼***	▼***
COGS: Raw materials	▲***	▲***	▼***
COGS: Electricity	▲***	▼***	▲***
COGS: Direct labor	▲***	▲***	▼***
COGS: Other factory	▼***	▲***	▼***
COGS: Less byproduct revenue	▼***	▲***	▼***
COGS: Total	▲***	▲***	▼***

Table continued.

Table 6.2 (Continued) Silicon metal: Changes in AUVs between comparison periods for the total market

Changes in dollars per STCS

Item	2022–24	2022–23	2023–24
Commercial sales	▼***	▼***	▼***
Transfers to related firms	▲***	▲***	▼***
Total net sales	▼***	▼***	▼***
COGS: Raw materials	▲***	▲***	▼***
COGS: Electricity	▲***	▼***	▲***
COGS: Direct labor	▲***	▲***	▼***
COGS: Other factory	▼***	▲***	▼***
COGS: Less byproduct revenue	▼***	▲***	▼***
COGS: Total	▲***	▲***	▼***
Gross profit or (loss)	▼***	▼***	▼***
SG&A expense	▲***	▲***	▼***
Operating income or (loss)	▼***	▼***	▼***
Net income or (loss)	▼***	▼***	▼***

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

Note: Percentages and unit values shown as “0.0” or “0.00” represent values greater than zero, but less than “0.05” or “0.005,” respectively. 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.

Table 6.3 Silicon metal: U.S. producers' results of merchant market operations, by item and period

Quantity in short tons contained silicon; value in 1,000 dollars; ratios in percent

Item	Measure	2022	2023	2024
Commercial sales	Quantity	***	***	***
Commercial sales	Value	***	***	***
COGS: Raw materials	Value	***	***	***
COGS: Electricity	Value	***	***	***
COGS: Direct labor	Value	***	***	***
COGS: Other factory	Value	***	***	***
COGS: Less byproduct revenue	Value	***	***	***
COGS: Total	Value	***	***	***
Gross profit or (loss)	Value	***	***	***
SG&A expenses	Value	***	***	***
Operating income or (loss)	Value	***	***	***
Interest expense	Value	***	***	***
Other expense/(income)	Value	***	***	***
Net income or (loss)	Value	***	***	***
Depreciation/amortization	Value	***	***	***
Cash flow	Value	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***
COGS: Electricity	Ratio to NS	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***
COGS: Other factory	Ratio to NS	***	***	***
COGS: Less byproduct revenue	Ratio to NS	***	***	***
COGS: Total	Ratio to NS	***	***	***
Gross profit	Ratio to NS	***	***	***
SG&A expense	Ratio to NS	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***
Net income or (loss)	Ratio to NS	***	***	***

Table continued.

Table 6.3 (Continued) Silicon metal: U.S. producers' results of merchant market operations, by item and period

Shares in percent; unit values in dollars per STCS; count in number of firms reporting

Item	Measure	2022	2023	2024
COGS: Raw materials	Share	***	***	***
COGS: Electricity	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Total	Share	100.0	100.0	100.0
Commercial sales	Unit value	***	***	***
COGS: Raw materials	Unit value	***	***	***
COGS: Electricity	Unit value	***	***	***
COGS: Direct labor	Unit value	***	***	***
COGS: Other factory	Unit value	***	***	***
COGS: Less byproduct revenue	Unit value	***	***	***
COGS: Total	Unit value	***	***	***
Gross profit or (loss)	Unit value	***	***	***
SG&A expenses	Unit value	***	***	***
Operating income or (loss)	Unit value	***	***	***
Net income or (loss)	Unit value	***	***	***
Operating losses	Count	***	***	***
Net losses	Count	***	***	***
Data	Count	2	2	2

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

Note: Shares represent the share of COGS. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Table 6.4 Silicon metal: Changes in AUVs between comparison periods for the merchant market

Changes in percent

Item	2022–24	2022–23	2023–24
Commercial sales	▼***	▼***	▼***
COGS: Raw materials	▲***	▲***	▼***
COGS: Electricity	▲***	▼***	▲***
COGS: Direct labor	▼***	▼***	▼***
COGS: Other factory	▼***	▲***	▼***
COGS: Less byproduct revenue	▼***	▲***	▼***
COGS: Total	▼***	▲***	▼***

Table continued.

Table 6.4 (Continued) Silicon metal: Changes in AUVs between comparison periods for the merchant market

Changes in dollars per STCS

Item	2022–24	2022–23	2023–24
Commercial sales	▼***	▼***	▼***
COGS: Raw materials	▲***	▲***	▼***
COGS: Electricity	▲***	▼***	▲***
COGS: Direct labor	▼***	▼***	▼***
COGS: Other factory	▼***	▲***	▼***
COGS: Less byproduct revenue	▼***	▲***	▼***
COGS: Total	▼***	▲***	▼***
Gross profit or (loss)	▼***	▼***	▼***
SG&A expense	▲***	▲***	▼***
Operating income or (loss)	▼***	▼***	▼***
Net income or (loss)	▼***	▼***	▼***

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

Note: Percentages and unit values shown as “0.0” or “0.00” represent values greater than zero, but less than “0.05” or “0.005,” respectively. 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.

Table 6.5 Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales quantity

Quantity in short tons contained silicon

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales value

Value in 1,000 dollars

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS

Value in 1,000 dollars

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss)

Value in 1,000 dollars

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued)Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses

Value in 1,000 dollars

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss)

Value in 1,000 dollars

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss)

Value in 1,000 dollars

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss) to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss) to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss) to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net sales value

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit raw material costs

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit electricity costs

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit direct labor costs

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit other factory costs

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit COGS

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit gross profit or (loss)

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit SG&A expenses

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit operating income or (loss)

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

Table continued.

Table 6.5 (Continued) Silicon metal: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net income or (loss)

Unit values in dollars per STCS

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Net sales

For the period as a whole, *** represent the majority of reported silicon metal sales on a quantity and value basis, *** percent and *** percent, respectively. *** represent the remainder.[6]

The U.S. industry's total silicon metal sales quantity decreased from 2023 and 2024. U.S. producers reported *** company-specific patterns. *** reported ***

[6] ***. Email from ***, May 21, 2025. ***. Email from ***, May 22, 2025.

***, while *** reported ***.[7] [8]

The U.S. industry's total net sales value declined in 2023 and 2024. *** experienced a decline in sales value and unit value each year.[9] [10] Overall average unit sales values (AUVs) (dollars per short ton of contained silicon) *** in 2023 and 2024. AUVs for transfers to related firms and joint venture partners ***. Table 6.3 shows that net sales AUVs ***. *** reported lower net sales AUVs than *** throughout 2022 to 2024.

For ***, AUVs for transfers were *** than ***.[11] For ***, AUVs for transfers were ***.[12]

Cost of goods sold and gross profit or loss

Raw material costs were the largest component of silicon metal COGS, ranging from *** percent in 2022 to *** percent in 2024. For the U.S. industry as a whole, carbonaceous reductants (ex. coal, charcoal, petroleum coke) account for the largest share of raw materials costs, followed by quartz, bulking agents (e.g., wood chips), electrodes, and other material

[7] ***. Email from ***, May 21, 2025. ***." Email from ***, May 22, 2025.
[8] Transfer quantities for ***.
[9] Transfer values for ***. *** U.S. producers' questionnaire, response, section 3.9a.
[10] ***." Email from ***, May 21, 2025. ***. Email from ***, May 22, 2025.
[11] ***. Email from ***, May 22, 2025.
[12] ***. Email from ***, May 21, 2025.

inputs. *** had *** unit raw material cost *** in 2022 and 2023, then *** in 2024.[13] Table 6.6 presents raw materials, by type.[14]

Table 6.6 Silicon metal: U.S. producers' raw material costs in 2024

Value in 1,000 dollars; unit values in dollars per STCS; share of value in percent

Item	Value	Unit value	Share of value
Carbonaceous reductants	***	***	***
Electrodes	***	***	***
Quartz	***	***	***
Bulking agents	***	***	***
Other material inputs	***	***	***
All raw materials	***	***	100.0

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

As a share of total COGS, electricity costs ranged from *** percent in 2023 to *** percent in 2024. On a company-specific basis, per unit electricity costs were *** for each year of the POI. From 2022 to 2024 per unit electricity costs ***.[15]

Direct labor as a share of COGS ranged from *** percent in 2023 and 2024 to *** percent in 2022. Per-short ton contained silicon direct labor costs increased in 2023, then decreased in 2024. For each year, unit direct labor costs were ***. Other factory costs as a share of COGS ranged from *** percent in 2024 to *** percent in 2023. Unit other factory costs were ***. From 2022 to 2023, *** unit other factory costs ***.[16]

[13] ***. Email from ***, May 22, 2025. ***. Email from ***, May 21, 2025.
[14] ***. U.S producers' questionnaire, response, section 3.6, email from ***, May 22, 2025.
[15] ***. Email from ***, May 21, 2025.
[16] ***. Email from ***, May 22, 2025. ***

(*continued*...)

*** produce *** byproducts. *** reported revenue for byproducts ***. *** reported revenue from byproducts ***. As a ratio to net sales, the deduction for byproducts ranged from *** percent to *** percent from 2022 to 2024.[17]

The U.S. industry's gross profit *** declined by *** percent from 2022 to 2024. Gross profit for *** in 2023 and 2024. During this period, overall gross profit as a share of net sales decreased by *** percentage points.

***. Email from ***, May 21, 2025.

[17] ***. Email from ***, May 22, 2025. ***. Email from ***, May 21, 2025.

SG&A expenses and operating income or loss

Overall SG&A ranged from $*** in 2022 to $*** in 2023. On a company-specific basis, *** SG&A expenses ***.[18] *** SG&A expenses ***. Overall unit SG&A expenses ranged from *** dollars per STCS in 2022 to *** dollars per SCTS in 2023. Unit SG&A for *** was *** in each year.

Overall, operating income shifted from ***. On a company-specific basis, ***. ***. On a per unit basis, *** operating income was *** in 2022, but *** in 2023. In 2024, *** unit operating ***.

All other expenses and net income or loss

Interest expense increased in 2023 and decreased in 2024. As a share of net sales, from 2022 to 2024, *** interest expense *** from *** percent to *** percent and *** interest expense *** from *** percent to *** percent.[19] In table 6.1, other expenses and other income have been combined and only the net amount is shown. For all years of the POI, overall other income was negative.

Overall, net income shifted from ***. On a company-specific basis, ***.

[18] ***. Email from ***, May 22, 2025. ***. Email from ***, May 21, 2025.

[19] ***. U.S. producer questionnaire, ***.

Variance analysis

A variance analysis for the total market operations of U.S. producers of silicon metal is presented in table 6.7.[20] The information for this variance analysis is derived from table 6.1. The decrease in operating income from 2022 to 2024 was largely due to an unfavorable price variance combined with unfavorable volume and cost variances.

Table 6.7 Silicon metal: Variance analysis on the total market operations of U.S. producers between comparison periods

Value in 1,000 dollars

Item	2022-24	2022-23	2023-24
Net sales price variance	***	***	***
Net sales volume variance	***	***	***
Net sales total variance	***	***	***
COGS cost variance	***	***	***
COGS volume variance	***	***	***
COGS total variance	***	***	***
Gross profit variance	***	***	***
SG&A cost variance	***	***	***
SG&A volume variance	***	***	***
SG&A total variance	***	***	***
Operating income price variance	***	***	***
Operating income cost variance	***	***	***
Operating income volume variance	***	***	***
Operating income total variance	***	***	***

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

Note: These data are derived from the data in table 6.1. Unfavorable variances (which are negative) are shown in parentheses, all others are favorable (positive).

[20] The Commission's variance analysis is calculated in three parts: Net sales variance, COGS variance, and SG&A expense variance. Each part consists of a price variance (in the case of the net sales variance) or a cost or expense variance (in the case of the COGS and SG&A expense variance), and a volume variance. The sales or cost/expense variances are calculated as the change in unit price or per-unit cost/expense, respectively, times the new volume, while the volume variance is calculated as the change in volume times the old unit price or per-unit cost/expense. Summarized at the bottom of the table, the operating income price variance is from sales; the operating income cost/expense variance is the sum of the cost components in the COGS and SG&A expense variances, and the operating income volume variance is the sum of the volume components of the net sales, COGS, and SG&A expense variances.

A variance analysis for the merchant market operations of U.S. producers of silicon metal is presented in table 6.8.[21] The information for this variance analysis is derived from table 6.3. The decrease in operating income from 2022 to 2024 was largely due to an unfavorable price variance.

Table 6.8 Silicon metal: Variance analysis on the merchant market operations of U.S. producers between comparison periods

Value in 1,000 dollars

Item	2022-24	2022-23	2023-24
Commercial sales price variance	***	***	***
Commercial sales volume variance	***	***	***
Commercial sales total variance	***	***	***
COGS cost variance	***	***	***
COGS volume variance	***	***	***
COGS total variance	***	***	***
Gross profit variance	***	***	***
SG&A cost variance	***	***	***
SG&A volume variance	***	***	***
SG&A total variance	***	***	***
Operating income price variance	***	***	***
Operating income cost variance	***	***	***
Operating income volume variance	***	***	***
Operating income total variance	***	***	***

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

Note: Unfavorable variances (which are negative) are shown in parentheses, all others are favorable (positive).

[21] The Commission's variance analysis is calculated in three parts: Net sales variance, COGS variance, and SG&A expense variance. Each part consists of a price variance (in the case of the net sales variance) or a cost or expense variance (in the case of the COGS and SG&A expense variance), and a volume variance. The sales or cost/expense variances are calculated as the change in unit price or per-unit cost/expense, respectively, times the new volume, while the volume variance is calculated as the change in volume times the old unit price or per-unit cost/expense. Summarized at the bottom of the table, the operating income price variance is from sales; the operating income cost/expense variance is the sum of the cost components in the COGS and SG&A expense variances, and the operating income volume variance is the sum of the volume components of the net sales, COGS, and SG&A expense variances.

Capital expenditures and research and development expenses

Table 6.9 presents capital expenditures, by firm, and table 6.10 presents the firms' narrative explanations of the nature, focus, and significance of their capital expenditures. Overall, capital expenditures declined from 2022 to 2024. Capital expenditures for *** were *** for each year of the POI. ***.

Table 6.9 Silicon metal: U.S. producers' capital expenditures, by firm and period

Value in 1,000 dollars

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

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

Table 6.10 Silicon metal: U.S. producers' narrative descriptions of their capital expenditures, by firm

Firm	Narrative on capital expenditures
Ferroglobe	***
MS Silicon	***

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

Assets and return on assets

Table 6.11 presents data on the U.S. producers' total assets while table 6.12 presents their operating ROA.[22] Table 6.13 presents U.S. producers' narrative responses explaining their major asset categories and any significant changes in asset levels over time. Total net assets decreased in 2023 and 2024. ROA decreased from *** percent in 2022 to *** percent in 2024.

Table 6.11 Silicon metal: U.S. producers' total net assets, by firm and period

Value in 1,000 dollars

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

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

Table 6.12 Silicon metal: U.S. producers' ROA, by firm and period

Ratio in percent

Firm	2022	2023	2024
Ferroglobe	***	***	***
MS Silicon	***	***	***
All firms	***	***	***

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

Table 6.13 Silicon metal: U.S. producers' narrative descriptions of their total net assets, by firm

Firm	Narrative on assets
Ferroglobe	***
MS Silicon	***

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

[22] The operating ROA is calculated as operating income divided by total assets. With respect to a firm's overall operations, the total asset value reflects an aggregation of a number of assets which are generally not product specific. Thus, high-level allocations are generally required in order to report a total asset value on a product-specific basis.

Capital and investment

The Commission requested U.S. producers of silicon metal to describe any actual or potential negative effects of imports of silicon metal from Angola, Austria, Laos, Norway, and Thailand on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table 6.14 presents the number of firms reporting an impact in each category and table 6.15 provides the U.S. producers' narrative responses.

Table 6.14 Silicon metal: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2022, by effect

Number of firms reporting

Effect	Category	Count
Cancellation, postponement, or rejection of expansion projects	Investment	***
Denial or rejection of investment proposal	Investment	***
Reduction in the size of capital investments	Investment	***
Return on specific investments negatively impacted	Investment	***
Other investment effects	Investment	***
Any negative effects on investment	Investment	***
Rejection of bank loans	Growth	***
Lowering of credit rating	Growth	***
Problem related to the issue of stocks or bonds	Growth	***
Ability to service debt	Growth	***
Other growth and development effects	Growth	***
Any negative effects on growth and development	Growth	***
Anticipated negative effects of imports	Future	***

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

Table 6.15 Silicon metal: U.S. producers' narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2022, by firm and effect

Item	Firm name and narrative on impact of imports
Cancellation, postponement, or rejection of expansion projects	***
Cancellation, postponement, or rejection of expansion projects	***
Denial or rejection of investment proposal	***
Reduction in the size of capital investments	***
Return on specific investments negatively impacted	***
Problem related to the issue of stocks or bonds	***
Other effects on growth and development	***
Anticipated effects of imports	***
Anticipated effects of imports	***

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

Part 7: Threat considerations and information on nonsubject countries

Section 771(7)(F)(i) of the Act (19 U.S.C. § 1677(7)(F)(i)) provides that—

> In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors[1]--
>
> (I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,
>
> (II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,
>
> (III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,
>
> (IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,
>
> (V) inventories of the subject merchandise,

[1] Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that "The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition."

(VI) 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,

(VII) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),

(VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).[2]

Information on the nature of the alleged subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in Parts 4 and 5; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in Part 6. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

[2] Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

Subject countries

The Commission issued foreign producers' or exporters' questionnaires to nine firms believed to produce and/or export silicon metal from Angola, Australia, Laos, Norway, and Thailand.[3] Usable responses to the Commission's questionnaire were received from five firms in total; one firm in Australia[4], two firms in Norway, and two firms in Thailand.[5]

Table 7.1 presents the number of producers/exporters that responded to the Commission's questionnaire, their estimated share of total production of silicon metal, and their exports to the United States as a share of U.S. imports, by each subject country in 2024.

[3] These firms were identified through a review of information submitted in the petition and presented in third-party sources.

[4] According to its website, Simcoa produces approximately 52,000 tons per year of silicon metal in Australia on three furnaces. History & Silicon | Simcoa, https://www.simcoa.com.au/history-silicon accessed May 22, 2025.

[5] According to its website, GS Energy in Thailand has approximately 45,000 metric tons of silicon metal production annually. G.S.ENERGY | The first silicon metal producer, https://gsesilicon.com/, accessed May 22, 2025.

According to its website, SICA in Thailand intends to produce up to 90,000 tons of silicon metal annually. Sica New Materials Group, http://www.sica-mtl.com/index_en.html, accessed May 22, 2025.

Table 7.1 Silicon metal: Number of responding producers/exporters, approximate share of production, and exports to the United States as a share of U.S. imports, by subject foreign industry, 2024

Subject foreign industry	Number of responding firms	Approximate share of production (percent)	Exports as a share of U.S. imports from subject country (percent)
Angola	0	***	***
Australia	1	***	***
Laos	0	***	***
Norway	2	***	***
Thailand	2	***	***

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

Note: “Approximate share of production” reflects the responding firms’ estimates of their production as a share of total country production of silicon metal in 2024. Since not all firms have perfect knowledge of the industry in their home market, different firms might use different denominators in estimating their firm's share of the total requested. For countries in which more than one firm responded, the average denominator for reasonably reported estimates is used in the share presented. Approximate shares are rounded to the nearest whole number.

Note: “Exports as a share of U.S. imports” reflects a comparison of export data reported by firms in response to the Commission’s foreign producer/exporter questionnaire with official Commerce import statistics using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed May 2, 2025. Imports are based on the general imports data series.

Note: Shares and ratios shown as “0.0” represent values greater than zero, but less than “0.05” percent. Zeroes, null values, and undefined calculations are suppressed and shown as “---”.

Table 7.2 presents information on the silicon metal operations of the responding producers in Australia, Norway, and Thailand (or the responding subject producers, by firm).

Table 7.2 Silicon metal: Summary data on responding subject foreign producers in 2024, by firm

Producer and (subject foreign industry)	Production (short tons contained silicon)	Share of reported production (percent)	Exports to the United States (short tons contained silicon)	Share of reported exports to the United States (percent)	Total ship-ments (short tons contained silicon)	Share of firm's total ship-ments exported to the United States (percent)
Australia: Simcoa (Australia)	***	***	***	***	***	***
Norway: Elkem	***	***	***	***	***	***
Norway: Wacker Chemicals	***	***	***	***	***	***
Thailand: GS Energy	***	***	***	***	***	***
Thailand: SICA	***	***	***	***	***	***
All individual producers	***	100.0	***	100.0	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***	***

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

Table 7.3 Silicon metal: Summary data for subject foreign producers, by country, 2024

Subject foreign industry	Production (short tons contained silicon)	Share of reported production (percent)	Exports to the United States (short tons contained silicon)	Share of reported exports to the United States (percent)	Total shipments (short tons contained silicon)	Share of firm's total shipments exported to the United States (percent)
Angola	***	***	***	***	***	***
Australia	***	***	***	***	***	***
Laos	***	***	***	***	***	***
Norway	***	***	***	***	***	***
Thailand	***	***	***	***	***	***
All subject foreign industries	***	100.0	***	100.0	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Table 7.4 presents events in the subject countries' industries since January 1, 2022.

Table 7.4 Silicon metal: Important industry events in the subject foreign industry since 2022

Item	Firm: Event
Planned plant expansion	In May 2022, Wacker announced the start of a feasibility study on building a new furnace at their Holla, Norway facility, which would increase silicon metal production there by approximately 50 percent.
Planned plant construction	As of October 2023, the Australian firm Solquartz secured land for a silicon metal plant in Queensland, Australia.
Planned plant construction	In October 2024, the Chinese firm Qinghai Lihao Clean Energy announced in collaboration with Angolan state-owned oil company Sonangol plans to establish 180,000 tons of silicon metal production in Angola within a few years.

Source: Wacker, Wacker Prepares to Expand Its Silicon Metal Production in Norway, https://www.wacker.com/cms/en-us/press-and-media/press/press-releases/2022/detail-171648.html, accessed May 20, 2025; TaiyangNews, Chinese Company Plans 150,000-Ton Polysilicon Plant In Angola, October 25, 2024, https://taiyangnews.info/markets/sonangol-qinghai-lihao-clean-energy-angola-mou-polysilicon-plant, accessed May 20, 2025; TaiyangNews, Polysilicon Manufacturing Planned In Australia, October 31, 2023, https://taiyangnews.info/markets/polysilicon-manufacturing-planned-in-australia, accessed May 20, 2025.

Changes in operations

Subject producers were asked to report any change in the character of their operations or organization relating to the production of silicon metal since 2022. Four of five responding producers indicated in their questionnaires that they had experienced such changes. Table 7.5 presents the changes identified by these producers.

Table 7.5 Silicon metal: Reported changes in operations since January 1, 2022, by change and subject foreign industry

Type of change	Subject foreign industry, firm name and accompanying narrative response regarding changes in operations
Prolonged shutdowns	***
Prolonged shutdowns	***
Production curtailments	***
Acquisitions	***
Weather-related or force majeure events	***
Weather-related or force majeure events	***
Other	***

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

Installed and practical overall capacity

Table 7.6 presents data on subject country producers' installed capacity, practical overall capacity, and practical silicon metal capacity and production on the same equipment. Between 2022 and 2024, installed overall capacity remained the same, while practical overall capacity increased *** percent, and practical silicon metal capacity increased *** percent. Installed overall, practical overall, and practical silicon metal production all decreased from 2022 to 2024, by *** percent, *** percent, and *** percent, respectively.[6] Additionally, capacity utilization also decreased for installed overall, practical overall, and practical silicon metal capacity during 2022 to 2024.

Table 7.6 Silicon metal: Producers' in subject foreign industries installed and practical capacity and production on the same equipment as subject production, by period

Capacity and production in short tons; utilization in percent

Item	Measure	2022	2023	2024
Installed overall	Capacity	***	***	***
Installed overall	Production	***	***	***
Installed overall	Utilization	***	***	***
Practical overall	Capacity	***	***	***
Practical overall	Production	***	***	***
Practical overall	Utilization	***	***	***
Practical Silicon metal	Capacity	***	***	***
Practical Silicon metal	Production	***	***	***
Practical Silicon metal	Utilization	***	***	***

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

Constraints on capacity

Tables 7.7 presents subject producers' reported production and capacity constraints since January 1, 2022. The most commonly reported capacity constraint was other constraints on capacity (reported by four firms), while three firms reported fuel and energy as capacity constraints.

[6] The decline in silicon metal production was primarily driven by ***. *** foreign producer questionnaire response, section II-3a.

Table 7.7 Silicon metal: Producers' in subject foreign industries reported constraints to practical overall capacity since January 1, 2022 by type of subject foreign industry, firm, and type of constraint

Type of constraint	Subject foreign industry, firm name, and narrative response on constraints to practical overall capacity
Production bottlenecks	***
Production bottlenecks	***
Existing labor force	***
Existing labor force	***
Supply of material inputs	***
Supply of material inputs	***

Table continued

Table 7.7 (Continued) Silicon metal: Producers' in subject foreign industries reported constraints to practical overall capacity since January 1, 2022 by type of subject foreign industry, firm, and type of constraint

Type of constraint	Subject foreign industry, firm name, and narrative response on constraints to practical overall capacity
Fuel or energy	***
Fuel or energy	***
Fuel or energy	***
Other constraints	***
Other constraints	***
Other constraints	***
Other constraints	***

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

Operations on silicon metal

Aggregate silicon metal operations in the subject countries

Table 7.8 presents information on the silicon metal operations of the responding producers/exporters (aggregate data for all subject foreign industries). Between 2022 and 2024, subject producers' combined capacity increased while production of silicon metal decreased. Subject producers' capacity utilization decreased (by nearly 20 percentage points) from 2022 to 2024. Exports to the United States *** from 2022 to 2024, while exports to all other markets decreased from 2022 to 2024. Home market shipments fluctuated but increased during 2022 and 2024.

Subject producers' exports to the United States, accounted for *** percent of total shipments in 2024. The leading exporter of silicon metal from the subject countries to the United States was *** followed by ***.

Exports to all other markets (other than the United States) accounted for the majority as a share of subject producers' total shipments of silicon metal from 2022 to 2024. Subject producers' exports accounted for the majority as a share of their total shipments, while home market shipments fluctuated but decreased as a share of total shipments to approximately *** in 2024.

Projections for subject producers in 2025 include projected capacity and production to remain the same, while exports to the United States and exports to all other markets were projected to be higher in 2026 than during 2025.

Table 7.8 Silicon metal: Data on subject foreign industries, by item and period

Quantity in short tons contained silicon

Item	2022	2023	2024	Projection 2025	Projection 2026
Capacity	***	***	***	***	***
Production	***	***	***	***	***
End-of-period inventories	***	***	***	***	***
Internal consumption	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***
Home market shipments	***	***	***	***	***
Exports to the United States	***	***	***	***	***
Exports to all other markets	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

Table continued.

Table 7.8 (Continued) Silicon metal: Data on subject foreign industries, by period

Ratio and share in percent

Item	2022	2023	2024	Projection 2025	Projection 2026
Capacity utilization ratio	***	***	***	***	***
Inventory ratio to production	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***
Internal consumption share	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***
Home market shipments share	***	***	***	***	***
Exports to the United States share	***	***	***	***	***
Exports to all other markets share	***	***	***	***	***
Export shipments share	***	***	***	***	***
Total shipments share	100.0	100.0	100.0	100.0	100.0

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

Aggregate silicon metal operations in the subject countries less Angola and Thailand

Table 7.9 presents information on the silicon metal operations of the responding producers/exporters (aggregate data for all subject foreign industries less Angola and Thailand).

Table 7.9 Silicon metal: Data on subject foreign industries less Angola and Thailand, by item and period

Quantity in short tons contained silicon

Item	2022	2023	2024	Projection 2025	Projection 2026
Capacity	***	***	***	***	***
Production	***	***	***	***	***
End-of-period inventories	***	***	***	***	***
Internal consumption	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***
Home market shipments	***	***	***	***	***
Exports to the United States	***	***	***	***	***
Exports to all other markets	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

Table continued

Table 7.9 (Continued) Silicon metal: Data on subject foreign industries less Angola and Thailand, by period

Ratios and share in percent

Item	2022	2023	2024	Projection 2025	Projection 2026
Capacity utilization ratio	***	***	***	***	***
Inventory ratio to production	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***
Internal consumption share	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***
Home market shipments share	***	***	***	***	***
Exports to the United States share	***	***	***	***	***
Exports to all other markets share	***	***	***	***	***
Export shipments share	***	***	***	***	***
Total shipments share	100.0	100.0	100.0	100.0	100.0

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

Practical silicon metal capacity and production by subject foreign industry

Table 7.10 presents information on subject producers' production, capacity, and capacity utilization by subject country. From 2022 to 2024, Australian producer's capacity *** while production decreased overall. Capacity utilization for the Australian producer decreased from *** percent in 2022 to *** percent 2024, or by *** percentage points. Australian producer's share of overall subject countries' production fluctuated but increased by *** percentage points from 2022 to 2024.

From 2022 to 2024, Norwegian producers' capacity *** while production decreased overall. Capacity utilization decreased by *** percentage points from *** percent in 2022 to *** percent in 2024. *** production of silicon metal decreased by *** from 2022 to 2024. Norwegian producers' production levels are projected to be higher in 2025 and 2026 than 2024 levels while capacity levels are projected to remain the same.

From 2022 to 2024, Thai producers' capacity increased but production fluctuated but decreased. Capacity utilization for the Thai producers fluctuated but decreased from *** percent in 2022 to *** percent in2024, by *** percentage points. Thai producers' capacity and production are projected to be lower in 2025 and 2026 than 2024 levels.

Table 7.10 Silicon metal: Subject foreign industries' output: Practical capacity, by subject foreign industry and period

Practical capacity

Quantity in short tons contained silicon

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	***	***	***	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***

Table continued.

Table 7.10 (Continued) Silicon metal: Subject foreign industries' output: Production, by subject foreign industry and period

Production

Quantity in short tons contained silicon

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	***	***	***	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***

Table continued.

Table 7.10 (Continued) Silicon metal: Subject foreign industries' output: Capacity utilization ratio, by subject foreign industry and period

Capacity utilization

Ratio in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	***	***	***	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***

Table continued.

Table 7.10 (Continued) Silicon metal: Subject foreign industries' output: Share of production, by subject foreign industry and period

Share of production

Share in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	100.0	100.0	100.0	100.0	100.0

Table continued

Note: Capacity utilization ratio represents the ratio of the subject producer’s production to its production capacity.

Table 7.10 (Continued) Silicon metal: Subject foreign industries' output: Share of production, by subject foreign industry less Angola and Thailand and period

Share of production

Share in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
All subject foreign industries less Angola and Thailand	100.0	100.0	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Silicon metal exports, by subject country

Table 7.11 presents information on subject producers' exports of silicon metal by subject country. Subject foreign industries (combined) exports to the United States increased *** percent from 2022 to 2024. Subject foreign industries (combined) exports are projected to be lower in 2025 and 2026 than in 2024. Subject foreign industries (combined) exports to the United States as a share of total exports, accounted for approximately *** percent from 2022 to 2024 (ranging from *** percent to *** percent). Subject foreign industries (combined) exports to all destinations decreased from 2022 to 2024. Subject foreign industries (combined) exports to all other markets are projected to be higher during 2025 and 2026 than 2024 levels.

Table 7.11 Silicon metal: Subject foreign industries' exports: Exports to the United States, by subject foreign industry and period

Exports to the United States

Quantity in short tons contained silicon

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	***	***	***	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***

Table continued.

Table 7.11 (Continued) Silicon metal: Subject foreign industries' exports: Share of total shipments exported to the United States, by subject foreign industry and period

Share of total shipments exported to the United States

Share in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	***	***	***	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***

Table continued.

Table 7.11 (Continued) Silicon metal: Subject foreign industries' exports: Total exports, by subject foreign industry and period

Total exports

Quantity in short tons contained silicon

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	***	***	***	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***

Table continued.

Table 7.11 (Continued) Silicon metal: Subject foreign industries' exports: Share of total shipments exported, by subject foreign industry and period

Share of total shipments exported

Share in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	***	***	***	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Silicon metal inventories, by subject foreign industry

Table 7.12 presents information on ending inventories of the responding producers by subject foreign country. The ratio of inventories to total shipments for all subject foreign industries combined was less than 15.0 percent from 2022 to 2024, in projection 2025 and 2026 this increases to above 15 percent. Inventories increased irregularly by *** percent during 2022 through 2024, and they were projected to be higher in 2025 and 2026 compared with 2024.

Table 7.12 Silicon metal: Subject foreign industries' inventories: End of period inventories, by subject foreign industry and period

Quantity in short tons contained silicon

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	***	***	***	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***

Table continued.

Table 7.12 (Continued) Silicon metal: Subject foreign industries' inventories: Ratio of inventories to total shipments, by subject foreign industry and period

Ratio in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
Angola	***	***	***	***	***
Australia	***	***	***	***	***
Laos	***	***	***	***	***
Norway	***	***	***	***	***
Thailand	***	***	***	***	***
All subject foreign industries	***	***	***	***	***
All subject foreign industries less Angola and Thailand	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Alternative products

As shown in table 7.13, responding firms in the subject countries produced other products on the same equipment and machinery used to produce silicon metal. Silicon metal production accounted for the majority of subject producers' overall production from 2022 to 2024. One responding producer/exporter, ***, reported the production of other products, including micro silica and fumed silica.

Table 7.13 Silicon metal: Producers' in subject foreign industries overall production on the same equipment as subject production, by product and period

Quantity in short tons contained silicon; shares in percent

Product type	Measure	2022	2023	2024
Silicon metal, contained weight	Quantity	***	***	***
Silicon metal, weight of other elements	Quantity	***	***	***
Silicon metal, total weight	Quantity	***	***	***
Ferrosilicon	Quantity	***	***	***
Out of scope products	Quantity	***	***	***
Other products	Quantity	***	***	***
All products	Quantity	***	***	***
Silicon metal, contained weight	Share	***	***	***
Silicon metal, weight of other elements	Share	***	***	***
Silicon metal, total weight	Share	***	***	***
Ferrosilicon	Share	***	***	***
Out of scope products	Share	***	***	***
Other products	Share	***	***	***
All products	Share	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Exports

Table 7.14 presents Global Trade Atlas ("GTA") data for exports of silicon metal from subject countries to the United States and to all destination markets. The vast majority of the silicon metal exports from subject producers/exporters were to countries other than the United States.

Table 7.14 Silicon metal: Global exports from subject exporters: Exports to the United States, by exporter and period

Quantity in short tons contained silicon

Exporter	Measure	2022	2023	2024
Angola	Quantity	—	—	1,829
Australia	Quantity	1,414	3,575	13,971
Laos	Quantity	649	3,936	8,493
Norway	Quantity	14,215	9,027	18,692
Thailand	Quantity	4,656	2,350	10,953
Subject exporters	Quantity	20,934	18,888	53,938
Subject exporters less Angola and Thailand	Quantity	16,278	16,538	41,155

Table continued.

Table 7.14 (Continued) Silicon metal: Global exports from subject exporters: Exports to all destination markets, by exporter and period

Quantity in short tons contained silicon

Exporter	Measure	2022	2023	2024
Angola	Quantity	—	—	5,543
Australia	Quantity	46,368	36,024	43,743
Laos	Quantity	14,270	14,997	41,575
Norway	Quantity	244,417	244,498	199,602
Thailand	Quantity	6,766	10,249	37,762
Subject exporters	Quantity	311,821	305,768	328,226
Subject exporters less Angola and Thailand	Quantity	305,055	295,519	284,921

Table continued.

Table 7.14 (Continued) Silicon metal: Global exports from subject exporters: Share of exports exported to the United States, by exporter and period

Share in percent

Exporter	Measure	2022	2023	2024
Angola	Share	—	—	33.0
Australia	Share	3.0	9.9	31.9
Laos	Share	4.5	26.2	20.4
Norway	Share	5.8	3.7	9.4
Thailand	Share	68.8	22.9	29.0
Subject exporters	Share	6.7	6.2	16.4
Subject exporters less Angola and Thailand	Share	5.3	5.6	14.4

Source: Official exports statistics under HS subheadings 2804.69 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed May 12, 2025. Official statistics for Angola and Laos as reported by various trading partners (constructed exports).

U.S. inventories of imported merchandise

Table 7.15 presents data on U.S. importers' reported inventories of silicon metal. During 2022 through 2024, importers' inventories from each subject country, except for Angola, increased. There were no inventories of U.S. imports from Angola, which were first imported in 2024. There were inventories from Laos and Thailand only in 2024. Inventories from Australia increased by *** percent, while inventories from Norway increased by *** percent. In total, importers' held inventories from subject countries increased by *** percent from *** million STCS in 2022 to *** million STCS in 2024. Inventories of silicon metal from nonsubject source, by comparison, decreased by *** percent from *** million STCS in 2022 to *** million STCS in 2024.

Table 7.15 Silicon metal: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in short tons contained silicon; ratio in percent

Measure	Source	2022	2023	2024
Inventories quantity	Angola	***	***	***
Ratio to imports	Angola	***	***	***
Ratio to U.S. shipments of imports	Angola	***	***	***
Ratio to total shipments of imports	Angola	***	***	***
Inventories quantity	Australia	***	***	***
Ratio to imports	Australia	***	***	***
Ratio to U.S. shipments of imports	Australia	***	***	***
Ratio to total shipments of imports	Australia	***	***	***
Inventories quantity	Laos	***	***	***
Ratio to imports	Laos	***	***	***
Ratio to U.S. shipments of imports	Laos	***	***	***
Ratio to total shipments of imports	Laos	***	***	***
Inventories quantity	Norway	***	***	***
Ratio to imports	Norway	***	***	***
Ratio to U.S. shipments of imports	Norway	***	***	***
Ratio to total shipments of imports	Norway	***	***	***
Inventories quantity	Thailand	***	***	***
Ratio to imports	Thailand	***	***	***
Ratio to U.S. shipments of imports	Thailand	***	***	***
Ratio to total shipments of imports	Thailand	***	***	***

Table continued.

Table 7.15 (Continued) Silicon metal: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in short tons contained silicon; ratio in percent

Measure	Source	2022	2023	2024
Inventories quantity	Subject sources	***	***	***
Ratio to imports	Subject sources	***	***	***
Ratio to U.S. shipments of imports	Subject sources	***	***	***
Ratio to total shipments of imports	Subject sources	***	***	***
Inventories quantity	Subject sources less Angola and Thailand	***	***	***
Ratio to imports	Subject sources less Angola and Thailand	***	***	***
Ratio to U.S. shipments of imports	Subject sources less Angola and Thailand	***	***	***
Ratio to total shipments of imports	Subject sources less Angola and Thailand	***	***	***
Inventories quantity	Nonsubject sources	***	***	***
Ratio to imports	Nonsubject sources	***	***	***
Ratio to U.S. shipments of imports	Nonsubject sources	***	***	***
Ratio to total shipments of imports	Nonsubject sources	***	***	***
Inventories quantity	Nonsubject sources plus Angola and Thailand	***	***	***
Ratio to imports	Nonsubject sources plus Angola and Thailand	***	***	***
Ratio to U.S. shipments of imports	Nonsubject sources plus Angola and Thailand	***	***	***
Ratio to total shipments of imports	Nonsubject sources plus Angola and Thailand	***	***	***
Inventories quantity	All import sources	***	***	***
Ratio to imports	All import sources	***	***	***
Ratio to U.S. shipments of imports	All import sources	***	***	***
Ratio to total shipments of imports	All import sources	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of silicon metal from Angola, Australia, Laos, and Norway after December 31, 2024. Their reported data are presented in table 7.16.***.

Table 7.16 Silicon metal: Arranged imports, by source and by period

Quantity in short tons contained silicon

Source	Measure	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Total
Angola	Quantity	***	***	***	***	***
Australia	Quantity	***	***	***	***	***
Laos	Quantity	***	***	***	***	***
Norway	Quantity	***	***	***	***	***
Thailand	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Subject sources less Angola and Thailand	Quantity	***	***	***	***	***
Nonsubect sources	Quantity	***	***	***	***	***
Nonsubject sources plus Angola and Thailand	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
Angola	Share	***	***	***	***	***
Australia	Share	***	***	***	***	***
Laos	Share	***	***	***	***	***
Norway	Share	***	***	***	***	***
Thailand	Share	***	***	***	***	***
Subject sources	Share	***	***	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***	***	***
Nonsubect sources	Share	***	***	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***	***	***
All import sources	Share	100.0	100.0	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Third-country trade actions

Based on available information, silicon metal from Angola, Australia, Laos, Norway, or Thailand has not been subject to other antidumping or countervailing duty investigations outside the United States.

Information on nonsubject countries

Table 7.17 presents the leading exporting countries of silicon metal from 2022 to 2024. Total world exports increased by 2.1 percent by quantity but decreased by 35.9 percent by value from 2022 to 2024. China accounted for the largest share of global exports by quantity in 2024 (44.6 percent), Brazil (10.5 percent), Netherlands (7.7 percent), and France (5.0 percent).

Table 7.17 Silicon metal: Global exports, by reporting country and by period

Quantity in short tons contained silicon; value in 1,000 dollars

Exporting country	Measure	2022	2023	2024
United States	Quantity	3,325	4,929	5,562
Angola	Quantity	—	—	5,543
Australia	Quantity	46,368	36,024	43,743
Laos	Quantity	14,270	14,997	41,575
Norway	Quantity	244,417	244,498	199,602
Thailand	Quantity	6,766	10,249	37,762
Subject exporters	Quantity	311,821	305,768	328,226
Subject exporters less Angola and Thailand	Quantity	305,055	295,519	284,921
China	Quantity	717,625	631,622	798,840
Brazil	Quantity	216,089	202,674	187,900
Netherlands	Quantity	124,236	132,687	137,393
France	Quantity	94,570	73,721	89,240
Malaysia	Quantity	46,724	35,930	45,103
Canada	Quantity	57,829	41,149	42,914
All other exporters	Quantity	181,007	117,348	154,134
Nonsubject exporters	Quantity	1,441,405	1,240,059	1,461,086
Nonsubject exporters plus Angola and Thailand	Quantity	1,448,171	1,250,308	1,504,392
All reporting exporters	Quantity	1,753,226	1,545,827	1,789,312
United States	Value	8,065	22,139	22,440
Angola	Value	—	—	102,747
Australia	Value	210,022	103,325	106,296
Laos	Value	59,526	35,183	86,615
Norway	Value	987,101	731,382	487,161
Thailand	Value	31,938	26,135	93,506
Subject exporters	Value	1,288,586	896,026	876,326
Subject exporters less Angola and Thailand	Value	1,256,649	869,891	680,072
China	Value	2,186,726	1,373,081	1,334,092
Brazil	Value	901,480	615,283	467,687
Netherlands	Value	407,502	356,740	340,645
France	Value	385,676	210,375	234,385
Malaysia	Value	131,488	73,930	100,991
Canada	Value	225,402	158,090	129,085
All other exporters	Value	588,087	309,823	418,468
Nonsubject exporters	Value	4,834,426	3,119,461	3,047,794
Nonsubject exporters plus Angola and Thailand	Value	4,866,363	3,145,596	3,244,047
All reporting exporters	Value	6,123,012	4,015,487	3,924,119

Table continued.

Table 7.17 (Continued) Silicon metal: Global exports, by reporting country and by period

Unit values in 1,000 dollars per STCS; shares in percent

Exporting country	Measure	2022	2023	2024
United States	Unit value	2,426	4,491	4,035
Angola	Unit value	—	—	18,536
Australia	Unit value	4,529	2,868	2,430
Laos	Unit value	4,171	2,346	2,083
Norway	Unit value	4,039	2,991	2,441
Thailand	Unit value	4,720	2,550	2,476
Subject exporters	Unit value	4,132	2,930	2,670
Subject exporters less Angola and Thailand	Unit value	4,119	2,944	2,387
China	Unit value	3,047	2,174	1,670
Brazil	Unit value	4,172	3,036	2,489
Netherlands	Unit value	3,280	2,689	2,479
France	Unit value	4,078	2,854	2,626
Malaysia	Unit value	2,814	2,058	2,239
Canada	Unit value	3,898	3,842	3,008
All other exporters	Unit value	3,249	2,640	2,715
Nonsubject exporters	Unit value	3,354	2,516	2,086
Nonsubject exporters plus Angola and Thailand	Unit value	3,360	2,516	2,156
All reporting exporters	Unit value	3,492	2,598	2,193
United States	Share of quantity	0.2	0.3	0.3
Angola	Share of quantity	—	—	0.3
Australia	Share of quantity	2.6	2.3	2.4
Laos	Share of quantity	0.8	1.0	2.3
Norway	Share of quantity	13.9	15.8	11.2
Thailand	Share of quantity	0.4	0.7	2.1
Subject exporters	Share of quantity	17.8	19.8	18.3
Subject exporters less Angola and Thailand	Share of quantity	17.4	19.1	15.9
China	Share of quantity	40.9	40.9	44.6
Brazil	Share of quantity	12.3	13.1	10.5
Netherlands	Share of quantity	7.1	8.6	7.7
France	Share of quantity	5.4	4.8	5.0
Malaysia	Share of quantity	2.7	2.3	2.5
Canada	Share of quantity	3.3	2.7	2.4
All other exporters	Share of quantity	10.3	7.6	8.6
Nonsubject exporters	Share of quantity	82.2	80.2	81.7
Nonsubject exporters plus Angola and Thailand	Share of quantity	82.6	80.9	84.1
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 2804.69 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed May 12, 2025.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—". United States is shown at the top followed by the countries under investigation, all remaining top exporting countries in descending order of 2024 data.

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
90 FR 17978, April 30, 2025	*Silicon Metal From Angola, Australia, Laos, Norway, and Thailand; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2025-04-30/pdf/2025-07458.pdf
90 FR 21741, May 21, 2025	*Silicon Metal From Angola, Australia, the Lao People's Democratic Republic, and Norway: Initiation of Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2025-05-21/pdf/2025-09027.pdf
90 FR 21746 May 21, 2025	*Silicon Metal From Australia, the Lao People's Democratic Republic, Norway, and Thailand: Initiation of Countervailing Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2025-05-21/pdf/2025-09028.pdf

APPENDIX B

LIST OF STAFF CONFERENCE WITNESSES

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

Those listed below appeared as witnesses at the United States International Trade Commission's preliminary conference:

Subject: Silicon Metal from Angola, Australia, Laos, Norway, and Thailand

Inv. Nos.: 701-TA-760-763 and 731-TA-1743-1746 (Preliminary)

Date and Time: May 15, 2025 – 9:30 a.m.

Sessions were held in connection with these preliminary phase investigations in the Main Hearing Room (Room 101), 500 E Street, SW., Washington, D.C.

OPENING REMARKS:

In Support of Imposition (**Benjamin J. Bay,** Bristol Group PLLC)
In Opposition to Imposition (**Jonathan T. Stoel,** Hogan Lovells US LLP)

In Support of the Imposition of the Antidumping and Countervailing Duty Orders:

Bristol Group PLLC
Washington, DC
on behalf of

Ferroglobe USA, Inc.
Mississippi Silicon LLC

Mohammed Chaal, Vice President, Commercial, Ferroglobe PLC

Taylor Cook, Account Manager, North America, Ferroglobe PLC

Braulio Lage, Director, Mississippi Silicon LLC

Andrew Szamosszegi, Principal, Capital Trade, Inc.

In Support of the Imposition of the

Antidumping and Countervailing Duty Orders (continued):

Travis Pope, Principal, Capital Trade, Inc.

Adam H. Gordon)
Benjamin J. Bay) – OF COUNSEL
Jennifer M. Smith-Veluz)

In Opposition to the Imposition of
Antidumping and Countervailing Duty Orders:

Cassidy Levy Kent LLP
Washington, DC
on behalf of

Elkem ASA

Darren Mansfield (remote), Project Manager, Business Development and Strategy, Silicon Products, Elkem ASA

Thomas M. Beline)
Natalia King) – OF COUNSEL
Aya Hall)

Faegre Drinker Biddle & Reath LLP
Washington, DC
on behalf of

Wacker Polysilicon North America LLC
Wacker Chemicals Norway (collectively "Wacker")

Oliver Majumdar, Senior Manager, Global Trade Affairs, Core Products, Wacker Chemie AG

Douglas J. Heffner)
) – OF COUNSEL
Richard P. Ferrin)

In Opposition of the Imposition of the
Antidumping and Countervailing Duty Orders (continued):

Hogan Lovells US LLP
Washington, DC
on behalf of

Simcoa Operations Pty, Ltd. ("Simcoa")
Shintech Inc. ("Shintech")

Jonathan T. Stoel)
Michael G. Jacobson) – OF COUNSEL
Lorea Mendiguren)

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**Adam H. Gordon,** Bristol Group PLLC)
In Opposition to Imposition (**Thomas M. Beline,** Cassidy Levy Kent LLP)

APPENDIX C

SUMMARY DATA

Total market

Table C.1

Silicon metal: Summary data concerning the U.S. total market, by item and period

Quantity=short tons contained silicon; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per STCS; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
U.S. total market consumption quantity:						
Amount	***	***	***	▼***	▼***	▲***
Producers' share (fn1)	***	***	***	▼***	▲***	▼***
Importers' share (fn1):						
Angola (AO)	***	***	***	▲***	***	▲***
Australia	***	***	***	▲***	▼***	▲***
Laos	***	***	***	▲***	▲***	▲***
Norway	***	***	***	▲***	▼***	▲***
Thailand (TH)	***	***	***	▼***	▼***	▲***
Subject sources	***	***	***	▲***	▼***	▲***
Subject sources less AO and TH	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▼***	▼***	▲***
Nonsubject sources plus AO and TH	***	***	***	▼***	▼***	▲***
All import sources	***	***	***	▲***	▼***	▲***
U.S. total market consumption value:						
Amount	***	***	***	▼***	▼***	▼***
Producers' share (fn1)	***	***	***	▼***	▲***	▼***
Importers' share (fn1):						
Angola (AO)	***	***	***	▲***	***	▲***
Australia	***	***	***	▲***	▼***	▲***
Laos	***	***	***	▲***	▲***	▲***
Norway	***	***	***	▼***	▼***	▲***
Thailand (TH)	***	***	***	▼***	▼***	▲***
Subject sources	***	***	***	▲***	▼***	▲***
Subject sources less AO and TH	***	***	***	▲***	▼***	▲***
Nonsubject sources	***	***	***	▼***	▼***	▼***
Nonsubject sources plus AO and TH	***	***	***	▼***	▼***	▲***
All import sources	***	***	***	▲***	▼***	▲***
U.S. imports from:						
Angola:						
Quantity	—	—	1,829	▲—	—	▲—
Value	—	—	4,226	▲—	—	▲—
Unit value	—	—	$2,311	▲—	—	▲—
Ending inventory quantity	***	***	***	***	***	***
Australia:						
Quantity	4,933	2,605	14,237	▲188.6	▼(47.2)	▲446.4
Value	19,696	9,954	45,598	▲131.5	▼(49.5)	▲358.1
Unit value	$3,993	$3,821	$3,203	▼(19.8)	▼(4.3)	▼(16.2)
Ending inventory quantity	***	***	***	▲***	▼***	▲***
Laos:						
Quantity	649	3,936	8,493	▲1,208.1	▲506.2	▲115.8
Value	1,958	9,790	18,868	▲863.7	▲400.1	▲92.7
Unit value	$3,015	$2,488	$2,222	▼(26.3)	▼(17.5)	▼(10.7)
Ending inventory quantity	***	***	***	▲***	***	▲***
Norway:						
Quantity	14,622	10,336	14,488	▼(0.9)	▼(29.3)	▲40.2
Value	85,717	44,214	45,055	▼(47.4)	▼(48.4)	▲1.9
Unit value	$5,862	$4,278	$3,110	▼(47.0)	▼(27.0)	▼(27.3)
Ending inventory quantity	***	***	***	▲***	▼***	▲***

Table continued.

Table C.1 Continued

Silicon metal: Summary data concerning the U.S. total market, by item and period

Quantity=short tons contained silicon; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per STCS; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
U.S. imports from: Continued						
Thailand:						
Quantity	8,213	2,168	3,686	▼(55.1)	▼(73.6)	▲70.0
Value	32,569	6,784	9,305	▼(71.4)	▼(79.2)	▲37.2
Unit value	$3,965	$3,130	$2,525	▼(36.3)	▼(21.1)	▼(19.3)
Ending inventory quantity	***	***	***	▲***	***	▲***
Subject sources:						
Quantity	28,418	19,045	42,733	▲50.4	▼(33.0)	▲124.4
Value	139,940	70,743	123,052	▼(12.1)	▼(49.4)	▲73.9
Unit value	$4,924	$3,715	$2,880	▼(41.5)	▼(24.6)	▼(22.5)
Ending inventory quantity	***	***	***	▲***	▼***	▲***
Subject sources less Angola and Thailand:						
Quantity	20,204	16,877	37,218	▲84.2	▼(16.5)	▲120.5
Value	107,371	63,958	109,521	▲2.0	▼(40.4)	▲71.2
Unit value	$5,314	$3,790	$2,943	▼(44.6)	▼(28.7)	▼(22.3)
Ending inventory quantity	***	***	***	▲***	▼***	▲***
Nonsubject sources:						
Quantity	137,985	92,029	118,206	▼(14.3)	▼(33.3)	▲28.4
Value	616,163	372,248	355,283	▼(42.3)	▼(39.6)	▼(4.6)
Unit value	$4,465	$4,045	$3,006	▼(32.7)	▼(9.4)	▼(25.7)
Ending inventory quantity	***	***	***	▼***	▼***	▲***
Nonsubject sources plus Angola and Thailand:						
Quantity	146,199	94,197	123,720	▼(15.4)	▼(35.6)	▲31.3
Value	648,732	379,032	368,814	▼(43.1)	▼(41.6)	▼(2.7)
Unit value	$4,437	$4,024	$2,981	▼(32.8)	▼(9.3)	▼(25.9)
Ending inventory quantity	***	***	***	▼***	▼***	▲***
All import sources:						
Quantity	166,403	111,074	160,939	▼(3.3)	▼(33.2)	▲44.9
Value	756,103	442,991	478,335	▼(36.7)	▼(41.4)	▲8.0
Unit value	$4,544	$3,988	$2,972	▼(34.6)	▼(12.2)	▼(25.5)
Ending inventory quantity	***	***	***	▲***	▼***	▲***
U.S. producers':						
Practical 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 (dollars per hour)	***	***	***	▲***	▼***	▲***
Productivity (STCS per 1,000 hours)	***	***	***	▲***	▼***	▲***
Unit labor costs	***	***	***	▼***	▲***	▼***

Table continued.

Table C.1 Continued
Silicon metal: Summary data concerning the U.S. total market, by item and period

Quantity=short tons contained silicon; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per STCS; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
U.S. producers': Continued						
Net sales:						
Quantity	***	***	***	▼***	▼***	▼***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▼***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	▲***	▲***	▼***
Gross profit or (loss) (fn2)	***	***	***	▼***	▼***	▼***
SG&A expenses	***	***	***	▲***	▲***	▼***
Operating income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
Net income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
Unit COGS	***	***	***	▲***	▲***	▼***
Unit SG&A expenses	***	***	***	▲***	▲***	▼***
Unit operating income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
Unit net income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
COGS/sales (fn1)	***	***	***	▲***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	▼***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	▼***	▼***	▼***
Capital expenditures	***	***	***	▼***	▼***	▼***
Research and development expenses	***	***	***	***	***	***
Total assets	***	***	***	▼***	▼***	▼***

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Import value data reflect CIF values. 508-compliant tables for these data are contained in parts 3, 4, 6, and 7 of this report.

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.

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.

Merchant market

Table C.2

Silicon metal: Summary data concerning the U.S. merchant market, by item and period

Quantity=short tons contained silicon; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per STCS; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
U.S. merchant market consumption quantity:						
Amount	***	***	***	▼***	▼***	▲***
Producers' share (fn1)	***	***	***	▼***	▲***	▼***
Importers' share (fn1):						
Angola (AO)	***	***	***	▲***	***	▲***
Australia	***	***	***	▲***	▼***	▲***
Laos	***	***	***	▲***	▲***	▲***
Norway	***	***	***	▲***	▼***	▲***
Thailand (TH)	***	***	***	▼***	▼***	▲***
Subject sources	***	***	***	▲***	▼***	▲***
Subject sources less AO and TH	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▼***	▼***	▲***
Nonsubject sources plus AO and TH	***	***	***	▼***	▼***	▲***
All import sources	***	***	***	▲***	▼***	▲***
U.S. merchant market consumption value:						
Amount	***	***	***	▼***	▼***	▼***
Producers' share (fn1)	***	***	***	▼***	▲***	▼***
Importers' share (fn1):						
Angola (AO)	***	***	***	▲***	***	▲***
Australia	***	***	***	▲***	▼***	▲***
Laos	***	***	***	▲***	▲***	▲***
Norway	***	***	***	▼***	▼***	▲***
Thailand (TH)	***	***	***	▼***	▼***	▲***
Subject sources	***	***	***	▲***	▼***	▲***
Subject sources less AO and TH	***	***	***	▲***	▼***	▲***
Nonsubject sources	***	***	***	▼***	▲***	▼***
Nonsubject sources plus AO and TH	***	***	***	▼***	▼***	▲***
All import sources	***	***	***	▲***	▼***	▲***
U.S. imports from:						
Angola:						
Quantity	—	—	1,829	▲—	—	▲—
Value	—	—	4,226	▲—	—	▲—
Unit value	—	—	$2,311	▲—	—	▲—
Ending inventory quantity	***	***	***	***	***	***
Australia:						
Quantity	4,933	2,605	14,237	▲188.6	▼(47.2)	▲446.4
Value	19,696	9,954	45,598	▲131.5	▼(49.5)	▲358.1
Unit value	$3,993	$3,821	$3,203	▼(19.8)	▼(4.3)	▼(16.2)
Ending inventory quantity	***	***	***	▲***	▼***	▲***
Laos:						
Quantity	649	3,936	8,493	▲1,208.1	▲506.2	▲115.8
Value	1,958	9,790	18,868	▲863.7	▲400.1	▲92.7
Unit value	$3,015	$2,488	$2,222	▼(26.3)	▼(17.5)	▼(10.7)
Ending inventory quantity	***	***	***	▲***	***	▲***
Norway:						
Quantity	14,622	10,336	14,488	▼(0.9)	▼(29.3)	▲40.2
Value	85,717	44,214	45,055	▼(47.4)	▼(48.4)	▲1.9
Unit value	$5,862	$4,278	$3,110	▼(47.0)	▼(27.0)	▼(27.3)
Ending inventory quantity	***	***	***	▲***	▼***	▲***

Table continued.

Table C.2 Continued

Silicon metal: Summary data concerning the U.S. merchant market, by item and period

Quantity=short tons contained silicon; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per STCS; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
U.S. imports from: Continued						
Thailand:						
Quantity	8,213	2,168	3,686	▼(55.1)	▼(73.6)	▲70.0
Value	32,569	6,784	9,305	▼(71.4)	▼(79.2)	▲37.2
Unit value	$3,965	$3,130	$2,525	▼(36.3)	▼(21.1)	▼(19.3)
Ending inventory quantity	***	***	***	▲***	***	▲***
Subject sources:						
Quantity	28,418	19,045	42,733	▲50.4	▼(33.0)	▲124.4
Value	139,940	70,743	123,052	▼(12.1)	▼(49.4)	▲73.9
Unit value	$4,924	$3,715	$2,880	▼(41.5)	▼(24.6)	▼(22.5)
Ending inventory quantity	***	***	***	▲***	▼***	▲***
Subject sources less Angola and Thailand:						
Quantity	20,204	16,877	37,218	▲84.2	▼(16.5)	▲120.5
Value	107,371	63,958	109,521	▲2.0	▼(40.4)	▲71.2
Unit value	$5,314	$3,790	$2,943	▼(44.6)	▼(28.7)	▼(22.3)
Ending inventory quantity	***	***	***	▲***	▼***	▲***
Nonsubject sources:						
Quantity	137,985	92,029	118,206	▼(14.3)	▼(33.3)	▲28.4
Value	616,163	372,248	355,283	▼(42.3)	▼(39.6)	▼(4.6)
Unit value	$4,465	$4,045	$3,006	▼(32.7)	▼(9.4)	▼(25.7)
Ending inventory quantity	***	***	***	▼***	▼***	▲***
Nonsubject sources plus Angola and Thailand:						
Quantity	146,199	94,197	123,720	▼(15.4)	▼(35.6)	▲31.3
Value	648,732	379,032	368,814	▼(43.1)	▼(41.6)	▼(2.7)
Unit value	$4,437	$4,024	$2,981	▼(32.8)	▼(9.3)	▼(25.9)
Ending inventory quantity	***	***	***	▼***	▼***	▲***
All import sources:						
Quantity	166,403	111,074	160,939	▼(3.3)	▼(33.2)	▲44.9
Value	756,103	442,991	478,335	▼(36.7)	▼(41.4)	▲8.0
Unit value	$4,544	$3,988	$2,972	▼(34.6)	▼(12.2)	▼(25.5)
Ending inventory quantity	***	***	***	▲***	▼***	▲***
U.S. producers':						
Commercial U.S. shipments:						
Quantity	***	***	***	▼***	▲***	▼***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▼***	▼***	▼***

Table continued.

Table C.2 Continued

Silicon metal: Summary data concerning the U.S. merchant market, by item and period

Quantity=short tons contained silicon; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per STCS; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
U.S. producers': Continued						
Commerical sales:						
Quantity	***	***	***	▲***	▲***	▼***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▼***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	▼***	▲***	▼***
Gross profit or (loss) (fn2)	***	***	***	▼***	▼***	▼***
SG&A expenses	***	***	***	▲***	▲***	▼***
Operating income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
Net income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
Unit COGS	***	***	***	▼***	▲***	▼***
Unit SG&A expenses	***	***	***	▲***	▲***	▼***
Unit operating income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
Unit net income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
COGS/sales (fn1)	***	***	***	▲***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	▼***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	▼***	▼***	▼***

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2804.69.1000 and 2804.69.5000, accessed on May 2, 2025. Imports are based on the general imports data series. Import value data reflect CIF values. 508-compliant tables for these data are contained in parts 3, 4, 6, and 7 of this report.

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.

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.

APPENDIX D

U.S. SHIPMENTS BY PRODUCT GRADE

Table D.1 Silicon metal: U.S. producers' and U.S. importers' U.S. shipments, by source and product grade

Quantity in short tons contained silicon; value in 1,000 dollars; unit values in dollars per STCS

Source	Measure	High purity	Other grades	All grades
U.S. producers	Quantity	***	***	***
Angola	Quantity	***	***	***
Australia	Quantity	***	***	***
Laos	Quantity	***	***	***
Norway	Quantity	***	***	***
Thailand	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Subject sources less Angola and Thailand	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
Nonsubject sources plus Angola and Thailand	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Value	***	***	***
Angola	Value	***	***	***
Australia	Value	***	***	***
Laos	Value	***	***	***
Norway	Value	***	***	***
Thailand	Value	***	***	***
Subject sources	Value	***	***	***
Subject sources less Angola and Thailand	Value	***	***	***
Nonsubject sources	Value	***	***	***
Nonsubject sources plus Angola and Thailand	Value	***	***	***
All import sources	Value	***	***	***
All sources	Value	***	***	***
U.S. producers	Unit value	***	***	***
Angola	Unit value	***	***	***
Australia	Unit value	***	***	***
Laos	Unit value	***	***	***
Norway	Unit value	***	***	***
Thailand	Unit value	***	***	***
Subject sources	Unit value	***	***	***
Subject sources less Angola and Thailand	Unit value	***	***	***
Nonsubject sources	Unit value	***	***	***
Nonsubject sources plus Angola and Thailand	Unit value	***	***	***
All import sources	Unit value	***	***	***
All sources	Unit value	***	***	***

Table continued.

Table D.1 (Continued) Silicon metal: U.S. producers' and U.S. importers' U.S. shipments, by source and product grade

Shares in percent

Source	Measure	High purity	Other grades	All grades
U.S. producers	Share of quantity	***	***	***
Angola	Share of quantity	***	***	***
Australia	Share of quantity	***	***	***
Laos	Share of quantity	***	***	***
Norway	Share of quantity	***	***	***
Thailand	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Subject sources less Angola and Thailand	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
Nonsubject sources plus Angola and Thailand	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0
U.S. producers	Share of value	***	***	***
Angola	Share of value	***	***	***
Australia	Share of value	***	***	***
Laos	Share of value	***	***	***
Norway	Share of value	***	***	***
Thailand	Share of value	***	***	***
Subject sources	Share of value	***	***	***
Subject sources less Angola and Thailand	Share of value	***	***	***
Nonsubject sources	Share of value	***	***	***
Nonsubject sources plus Angola and Thailand	Share of value	***	***	***
All import sources	Share of value	***	***	***
All sources	Share of value	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Figure D.1 Silicon metal: U.S. producers' U.S. shipments and U.S. importers' U.S. import of silicon metal, by source and grade in 2024

* * * * * * *

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

Figure D.2 Silicon metal: U.S. producers' U.S. shipments and U.S. importers' U.S. import of silicon metal, by source and grade in 2024

* * * * * * *

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

APPENDIX E

U.S. SHIPMENTS BY CHANNEL OF DISTRIBUTION

Table E.1 Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to distributors, by source and period

Quantity in short tons contained silicon; shares in percent

Source	Measure	2022	2023	2024
U.S. producers	Quantity	***	***	***
Angola	Quantity	***	***	***
Australia	Quantity	***	***	***
Laos	Quantity	***	***	***
Norway	Quantity	***	***	***
Thailand	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Subject sources less Angola and Thailand	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
Nonsubject sources plus Angola and Thailand	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	13,334	12,924	14,680
U.S. producers	Share	***	***	***
Angola	Share	***	***	***
Australia	Share	***	***	***
Laos	Share	***	***	***
Norway	Share	***	***	***
Thailand	Share	***	***	***
Subject sources	Share	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***
Nonsubject sources	Share	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Table continued.

Table E.1(Continued) Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to distributors, by source and period

Ratio in percent.

Source	Measure	2022	2023	2024
U.S. producers	Ratio	***	***	***
Angola	Ratio	***	***	***
Australia	Ratio	***	***	***
Laos	Ratio	***	***	***
Norway	Ratio	***	***	***
Thailand	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Subject sources less Angola and Thailand	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
Nonsubject sources plus Angola and Thailand	Ratio	***	***	***
All import sources	Ratio	***	***	***
All sources	Ratio	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—". Ratio represent the ratio of the data in this table to overall apparent consumption. Since overall apparent consumption is based on official import statistics, the sum of the ratios across all five tables in this appendix will not sum to 100.0 percent.

Table E.2 Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to chemical producers, by source and period

Quantity in short tons contained silicon; shares in percent

Source	Measure	2022	2023	2024
U.S. producers	Quantity	***	***	***
Angola	Quantity	***	***	***
Australia	Quantity	***	***	***
Laos	Quantity	***	***	***
Norway	Quantity	***	***	***
Thailand	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Subject sources less Angola and Thailand	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
Nonsubject sources plus Angola and Thailand	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	140,367	145,462	164,861
U.S. producers	Share	***	***	***
Angola	Share	***	***	***
Australia	Share	***	***	***
Laos	Share	***	***	***
Norway	Share	***	***	***
Thailand	Share	***	***	***
Subject sources	Share	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***
Nonsubject sources	Share	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Table continued.

Table E.2 (Continued) Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to chemical producers, by source and period

Ratio in percent.

Source	Measure	2022	2023	2024
U.S. producers	Ratio	***	***	***
Angola	Ratio	***	***	***
Australia	Ratio	***	***	***
Laos	Ratio	***	***	***
Norway	Ratio	***	***	***
Thailand	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Subject sources less Angola and Thailand	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
Nonsubject sources plus Angola and Thailand	Ratio	***	***	***
All import sources	Ratio	***	***	***
All sources	Ratio	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—". Ratio represent the ratio of the data in this table to overall apparent consumption. Since overall apparent consumption is based on official import statistics, the sum of the ratios across all five tables in this appendix will not sum to 100.0 percent.

Table E.3 Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to primary aluminum producers, by source and period

Quantity in short tons contained silicon; shares in percent

Source	Measure	2022	2023	2024
U.S. producers	Quantity	***	***	***
Angola	Quantity	***	***	***
Australia	Quantity	***	***	***
Laos	Quantity	***	***	***
Norway	Quantity	***	***	***
Thailand	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Subject sources less Angola and Thailand	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
Nonsubject sources plus Angola and Thailand	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	3,267	2,408	2,866
U.S. producers	Share	***	***	***
Angola	Share	***	***	***
Australia	Share	***	***	***
Laos	Share	***	***	***
Norway	Share	***	***	***
Thailand	Share	***	***	***
Subject sources	Share	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***
Nonsubject sources	Share	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Table continued.

Table E.3 (Continued) Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to primary aluminum producers, by source and period

Ratio in percent.

Source	Measure	2022	2023	2024
U.S. producers	Ratio	***	***	***
Angola	Ratio	***	***	***
Australia	Ratio	***	***	***
Laos	Ratio	***	***	***
Norway	Ratio	***	***	***
Thailand	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Subject sources less Angola and Thailand	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
Nonsubject sources plus Angola and Thailand	Ratio	***	***	***
All import sources	Ratio	***	***	***
All sources	Ratio	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—". Ratio represent the ratio of the data in this table to overall apparent consumption. Since overall apparent consumption is based on official import statistics, the sum of the ratios across all five tables in this appendix will not sum to 100.0 percent.

Table E.4 Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to secondary aluminum producers, by source and period

Quantity in short tons contained silicon; shares in percent

Source	Measure	2022	2023	2024
U.S. producers	Quantity	***	***	***
Angola	Quantity	***	***	***
Australia	Quantity	***	***	***
Laos	Quantity	***	***	***
Norway	Quantity	***	***	***
Thailand	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Subject sources less Angola and Thailand	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
Nonsubject sources plus Angola and Thailand	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	36,739	28,616	29,012
U.S. producers	Share	***	***	***
Angola	Share	***	***	***
Australia	Share	***	***	***
Laos	Share	***	***	***
Norway	Share	***	***	***
Thailand	Share	***	***	***
Subject sources	Share	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***
Nonsubject sources	Share	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Table continued.

Table E.4 (Continued) Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to secondary aluminum producers, by source and period

Ratio in percent.

Source	Measure	2022	2023	2024
U.S. producers	Ratio	***	***	***
Angola	Ratio	***	***	***
Australia	Ratio	***	***	***
Laos	Ratio	***	***	***
Norway	Ratio	***	***	***
Thailand	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Subject sources less Angola and Thailand	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
Nonsubject sources plus Angola and Thailand	Ratio	***	***	***
All import sources	Ratio	***	***	***
All sources	Ratio	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“. Ratio represent the ratio of the data in this table to overall apparent consumption. Since overall apparent consumption is based on official import statistics, the sum of the ratios across all five tables in this appendix will not sum to 100.0 percent.

Table E.5 Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to all other end users, by source and period

Quantity in short tons contained silicon; shares in percent

Source	Measure	2022	2023	2024
U.S. producers	Quantity	***	***	***
Angola	Quantity	***	***	***
Australia	Quantity	***	***	***
Laos	Quantity	***	***	***
Norway	Quantity	***	***	***
Thailand	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Subject sources less Angola and Thailand	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
Nonsubject sources plus Angola and Thailand	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	19,724	18,501	16,277
U.S. producers	Share	***	***	***
Angola	Share	***	***	***
Australia	Share	***	***	***
Laos	Share	***	***	***
Norway	Share	***	***	***
Thailand	Share	***	***	***
Subject sources	Share	***	***	***
Subject sources less Angola and Thailand	Share	***	***	***
Nonsubject sources	Share	***	***	***
Nonsubject sources plus Angola and Thailand	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Table continued.

Table E.5 (Continued) Silicon metal: U.S. producers' and U.S. importers' U.S. shipments to all other end users, by source and period

Ratio in percent.

Source	Measure	2022	2023	2024
U.S. producers	Ratio	***	***	***
Angola	Ratio	***	***	***
Australia	Ratio	***	***	***
Laos	Ratio	***	***	***
Norway	Ratio	***	***	***
Thailand	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Subject sources less Angola and Thailand	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
Nonsubject sources plus Angola and Thailand	Ratio	***	***	***
All import sources	Ratio	***	***	***
All sources	Ratio	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—". Ratio represent the ratio of the data in this table to overall apparent consumption. Since overall apparent consumption is based on official import statistics, the sum of the ratios across all five tables in this appendix will not sum to 100.0 percent.

APPENDIX F

QUARTERLY IMPORTS BY PRODUCT GRADE

Table F.1 High purity (99.00 to 99.99 percent) silicon metal: Quarterly U.S. imports, by source and period

Quantity in short tons contained silicon

Period	Measure	Angola	Australia	Laos	Norway	Thailand	Subject sources	SUB less AO and TH
2022 Q1	Quantity	—	538	—	1,157	713	2,408	1,695
2022 Q2	Quantity	—	148	—	1,499	298	1,944	1,646
2022 Q3	Quantity	—	370	—	2,183	980	3,533	2,553
2022 Q4	Quantity	—	378	109	2,555	607	3,649	3,043
2023 Q1	Quantity	—	633	—	1,979	367	2,979	2,612
2023 Q2	Quantity	—	599	768	1,285	675	3,326	2,651
2023 Q3	Quantity	—	1,036	2,192	1,908	654	5,790	5,135
2023 Q4	Quantity	—	337	438	2,179	105	3,059	2,954
2024 Q1	Quantity	—	1,957	1,065	1,242	1,712	5,977	4,265
2024 Q2	Quantity	105	4,886	2,467	1,303	421	9,183	8,657
2024 Q3	Quantity	1,276	4,947	3,436	3,646	647	13,952	12,029
2024 Q4	Quantity	105	2,163	1,524	5,579	888	10,259	9,266
2025 Q1	Quantity	901	2,991	1,599	6,053	218	11,763	10,643

Table continued.

Table F.1 (Continued) High purity (99.00 to 99.99 percent) silicon metal: Quarterly U.S. imports, by source and period

Quantity in short tons contained silicon

Period	Measure	Brazil	Canada	France	Malaysia	All other sources	Nonsubject sources	NON plus AO and TH
2022 Q1	Quantity	11,862	5,572	—	4,335	236	22,005	22,718
2022 Q2	Quantity	7,678	2,028	—	3,308	933	13,948	14,246
2022 Q3	Quantity	6,974	—	—	—	271	7,245	8,225
2022 Q4	Quantity	13,106	423	156	—	786	14,470	15,077
2023 Q1	Quantity	7,472	5,846	—	—	189	13,507	13,875
2023 Q2	Quantity	13,421	7,502	—	—	306	21,229	21,904
2023 Q3	Quantity	14,637	7,933	—	—	1	22,570	23,224
2023 Q4	Quantity	11,072	7,615	—	—	134	18,821	18,926
2024 Q1	Quantity	12,740	7,361	—	109	110	20,320	22,032
2024 Q2	Quantity	13,158	11,860	1,064	65	1,063	27,210	27,736
2024 Q3	Quantity	16,663	10,202	473	1,400	1,196	29,934	31,858
2024 Q4	Quantity	12,114	7,126	1,575	3,353	1,126	25,294	26,288
2025 Q1	Quantity	25,023	7,498	—	1,785	732	35,038	36,158

Table continued.

Table F.1 (Continued) High purity (99.00 to 99.99 percent) silicon metal: Quarterly U.S. imports, by source and period

Value in 1,000 dollars

Period	Measure	Angola	Australia	Laos	Norway	Thailand	Subject sources	SUB less AO and TH
2022 Q1	Value	—	2,789	—	3,062	2,317	8,169	5,852
2022 Q2	Value	—	748	—	1,639	1,608	3,995	2,387
2022 Q3	Value	—	1,564	—	20,807	5,530	27,902	22,372
2022 Q4	Value	—	1,820	312	20,811	3,036	25,979	22,944
2023 Q1	Value	—	3,210	—	13,251	1,384	17,845	16,461
2023 Q2	Value	—	2,298	2,113	5,119	1,846	11,377	9,531
2023 Q3	Value	—	3,472	5,333	7,435	1,809	18,049	16,240
2023 Q4	Value	—	973	938	7,891	230	10,033	9,802
2024 Q1	Value	—	6,427	2,333	3,962	3,979	16,702	12,723
2024 Q2	Value	210	15,326	5,411	3,944	1,077	25,968	24,681
2024 Q3	Value	2,760	15,608	7,529	10,134	1,500	37,530	33,271
2024 Q4	Value	234	7,226	3,594	18,602	2,717	32,372	29,422
2025 Q1	Value	1,961	8,964	3,262	18,248	452	32,886	30,474

Table continued.

Table F.1 (Continued) High purity (99.00 to 99.99 percent) silicon metal: Quarterly U.S. imports, by source and period

Value in 1,000 dollars

Period	Measure	Brazil	Canada	France	Malaysia	All other sources	Nonsubject sources	NON plus AO and TH
2022 Q1	Value	33,914	12,257	—	21,387	474	68,032	70,349
2022 Q2	Value	30,097	11,708	—	17,781	3,607	63,193	64,800
2022 Q3	Value	35,887	—	—	—	892	36,779	42,309
2022 Q4	Value	68,579	2,492	538	—	1,796	73,405	76,441
2023 Q1	Value	31,174	29,135	—	—	578	60,886	62,271
2023 Q2	Value	60,216	31,191	—	—	842	92,249	94,095
2023 Q3	Value	53,841	30,601	—	—	4	84,447	86,255
2023 Q4	Value	36,715	25,364	—	—	299	62,378	62,608
2024 Q1	Value	39,575	22,934	—	250	269	63,028	67,007
2024 Q2	Value	40,525	34,960	2,740	172	2,510	80,908	82,194
2024 Q3	Value	49,058	32,199	1,541	3,725	3,295	89,817	94,076
2024 Q4	Value	38,161	23,499	4,804	10,037	2,814	79,316	82,266
2025 Q1	Value	74,206	23,677	—	3,806	1,599	103,288	105,701

Table continued.

Table F.1 (Continued) High purity (99.00 to 99.99 percent) silicon metal: Quarterly U.S. imports, by source and period

Unit values in dollars per short ton contained silicon

Period	Measure	Angola	Australia	Laos	Norway	Thailand	Subject sources	SUB less AO and TH
2022 Q1	Unit value	—	5,188	—	2,647	3,250	3,393	3,453
2022 Q2	Unit value	—	5,069	—	1,094	5,399	2,055	1,450
2022 Q3	Unit value	—	4,232	—	9,530	5,642	7,897	8,763
2022 Q4	Unit value	—	4,813	2,859	8,144	5,004	7,119	7,540
2023 Q1	Unit value	—	5,071	—	6,696	3,768	5,990	6,302
2023 Q2	Unit value	—	3,837	2,753	3,985	2,736	3,421	3,595
2023 Q3	Unit value	—	3,351	2,433	3,898	2,765	3,118	3,162
2023 Q4	Unit value	—	2,886	2,139	3,622	2,199	3,280	3,318
2024 Q1	Unit value	—	3,284	2,190	3,189	2,323	2,794	2,983
2024 Q2	Unit value	2,004	3,137	2,193	3,026	2,558	2,828	2,851
2024 Q3	Unit value	2,162	3,155	2,191	2,779	2,319	2,690	2,766
2024 Q4	Unit value	2,230	3,340	2,358	3,334	3,058	3,155	3,175
2025 Q1	Unit value	2,175	2,997	2,040	3,015	2,071	2,796	2,863

Table continued.

Table F.1 (Continued) High purity (99.00 to 99.99 percent) silicon metal: Quarterly U.S. imports, by source and period

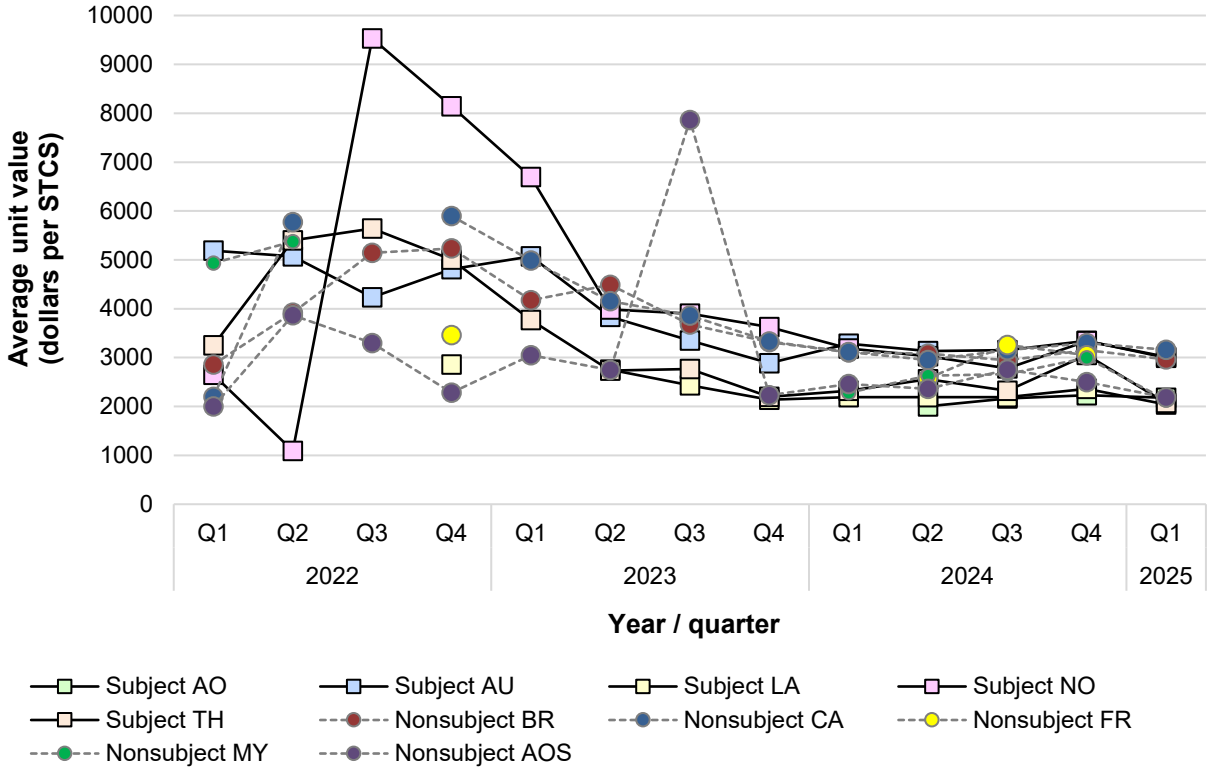
Unit values in dollars per short ton contained silicon

Period	Measure	Brazil	Canada	France	Malaysia	All other sources	Nonsubject sources	NON plus AO and TH
2022 Q1	Unit value	2,859	2,200	—	4,934	2,004	3,092	3,097
2022 Q2	Unit value	3,920	5,773	—	5,375	3,865	4,531	4,549
2022 Q3	Unit value	5,146	—	—	—	3,297	5,076	5,144
2022 Q4	Unit value	5,233	5,898	3,458	—	2,285	5,073	5,070
2023 Q1	Unit value	4,172	4,984	—	—	3,049	4,508	4,488
2023 Q2	Unit value	4,487	4,158	—	—	2,749	4,345	4,296
2023 Q3	Unit value	3,678	3,858	—	—	7,862	3,742	3,714
2023 Q4	Unit value	3,316	3,331	—	—	2,228	3,314	3,308
2024 Q1	Unit value	3,106	3,116	—	2,284	2,456	3,102	3,041
2024 Q2	Unit value	3,080	2,948	2,576	2,631	2,361	2,973	2,963
2024 Q3	Unit value	2,944	3,156	3,260	2,660	2,756	3,000	2,953
2024 Q4	Unit value	3,150	3,297	3,049	2,993	2,500	3,136	3,129
2025 Q1	Unit value	2,966	3,158	—	2,132	2,184	2,948	2,923

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2804.69.1000, accessed on May 12, 2025. Imports are based on the general imports data series. Value data are based on CIF values.

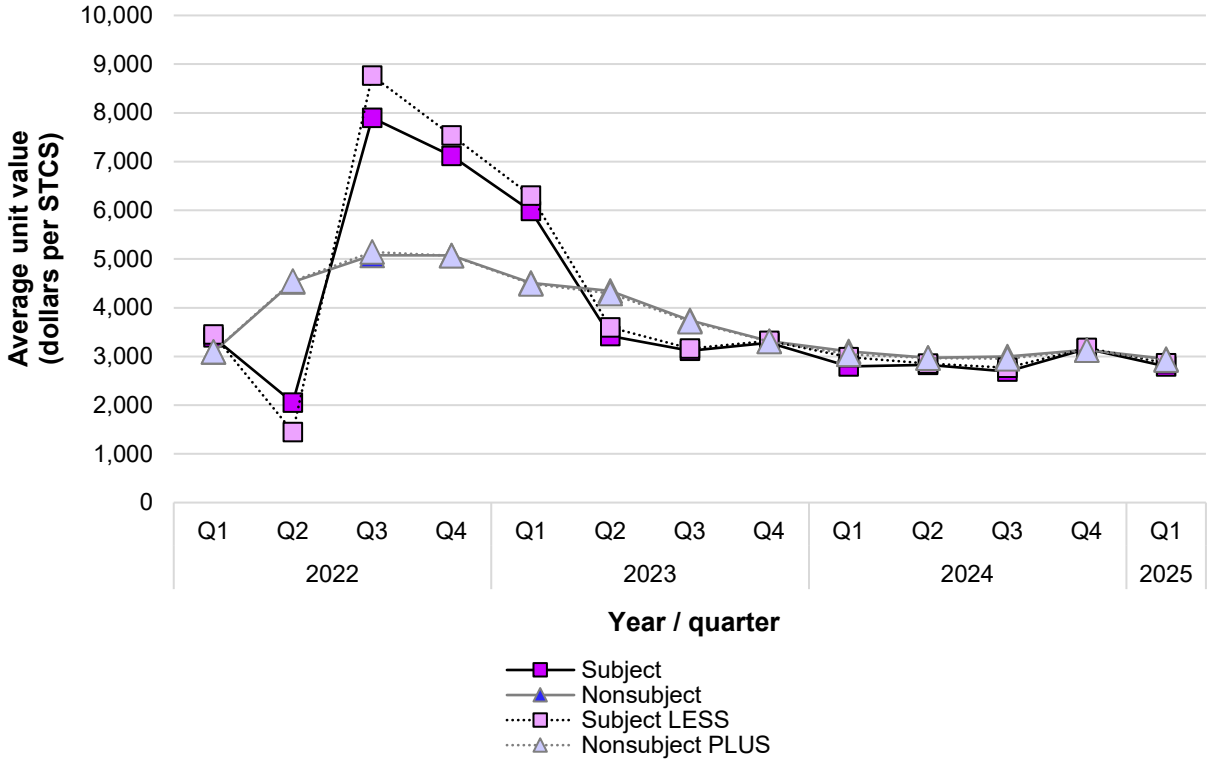
Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

Figure F.1 High purity (99.00 to 99.99 percent) silicon metal: Quarterly U.S. imports, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2804.69.1000, accessed on May 12, 2025. Imports are based on the general imports data series. Value data are based on CIF values.

Figure F.2 High purity (99.00 to 99.99 percent) silicon metal: Quarterly U.S. imports, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2804.69.1000, accessed on May 12, 2025. Imports are based on the general imports data series. Value data are based on CIF values.

Note: Subject LESS is subject sources less Angola and Thailand. Nonsubject PLUS is nonsubject sources plus Angola and Thailand.

Table F.2 Other than high purity (<99.00 percent) silicon metal: Quarterly U.S. imports, by source and period

Quantity in short tons contained silicon

Period	Measure	Angola	Australia	Laos	Norway	Thailand	Subject sources	SUB less AO and TH
2022 Q1	Quantity	—	2,407	—	1,381	1,625	5,413	3,788
2022 Q2	Quantity	—	520	—	2,375	2,983	5,879	2,895
2022 Q3	Quantity	—	97	216	1,909	304	2,527	2,222
2022 Q4	Quantity	—	476	324	1,562	703	3,065	2,361
2023 Q1	Quantity	—	—	152	570	261	983	722
2023 Q2	Quantity	—	—	174	812	—	986	986
2023 Q3	Quantity	—	—	—	913	—	913	913
2023 Q4	Quantity	—	—	212	691	106	1,009	903
2024 Q1	Quantity	—	4	—	670	—	674	674
2024 Q2	Quantity	—	69	—	591	17	677	660
2024 Q3	Quantity	288	211	—	527	—	1,025	737
2024 Q4	Quantity	55	—	—	931	—	986	931
2025 Q1	Quantity	728	2	—	633	—	1,364	635

Table continued.

Table F.2 (Continued) Other than high purity (<99.00 percent) silicon metal: Quarterly U.S. imports, by source and period

Quantity in short tons contained silicon

Period	Measure	Brazil	Canada	France	Malaysia	All other sources	Nonsubject sources	NON plus AO and TH
2022 Q1	Quantity	4,995	5,105	10	899	1,162	12,170	13,795
2022 Q2	Quantity	20,897	11,278	—	940	2,451	35,566	38,549
2022 Q3	Quantity	10,002	7,895	21	—	157	18,075	18,380
2022 Q4	Quantity	12,729	1,614	43	—	120	14,506	15,209
2023 Q1	Quantity	5,648	1,630	21	—	239	7,538	7,799
2023 Q2	Quantity	2,543	558	63	—	109	3,273	3,273
2023 Q3	Quantity	2,308	—	64	136	55	2,563	2,563
2023 Q4	Quantity	2,009	—	42	452	23	2,527	2,633
2024 Q1	Quantity	1,803	1	43	732	175	2,753	2,753
2024 Q2	Quantity	1,261	—	339	952	157	2,709	2,726
2024 Q3	Quantity	4,134	175	225	326	337	5,197	5,485
2024 Q4	Quantity	3,647	156	43	—	942	4,788	4,843
2025 Q1	Quantity	4,169	—	0	—	796	4,965	5,693

Table continued.

Table F.2 (Continued) Other than high purity (<99.00 percent) silicon metal: Quarterly U.S. imports, by source and period

Value in 1,000 dollars

Period	Measure	Angola	Australia	Laos	Norway	Thailand	Subject sources	SUB less AO and TH
2022 Q1	Value	—	6,343	—	4,255	6,762	17,360	10,598
2022 Q2	Value	—	2,388	—	11,333	7,865	21,585	13,721
2022 Q3	Value	—	777	641	13,063	2,708	17,189	14,481
2022 Q4	Value	—	3,266	1,005	10,745	2,744	17,761	15,017
2023 Q1	Value	—	—	441	2,953	1,230	4,624	3,394
2023 Q2	Value	—	—	504	2,805	—	3,309	3,309
2023 Q3	Value	—	—	—	2,853	—	2,853	2,853
2023 Q4	Value	—	—	461	1,906	285	2,652	2,367
2024 Q1	Value	—	14	—	1,475	—	1,489	1,489
2024 Q2	Value	—	205	—	2,558	33	2,796	2,763
2024 Q3	Value	577	792	—	1,859	—	3,227	2,650
2024 Q4	Value	446	—	—	2,522	—	2,968	2,522
2025 Q1	Value	1,370	6	—	1,747	—	3,124	1,754

Table continued.

Table F.2 (Continued) Other than high purity (<99.00 percent) silicon metal: Quarterly U.S. imports, by source and period

Value in 1,000 dollars

Period	Measure	Brazil	Canada	France	Malaysia	All other sources	Nonsubject sources	NON plus AO and TH
2022 Q1	Value	9,753	21,628	35	3,311	1,957	36,685	43,447
2022 Q2	Value	28,503	59,671	—	5,392	4,368	97,933	105,798
2022 Q3	Value	72,582	63,477	72	—	849	136,981	139,689
2022 Q4	Value	92,169	10,104	174	—	708	103,155	105,899
2023 Q1	Value	30,826	9,830	75	—	917	41,647	42,877
2023 Q2	Value	12,951	2,345	227	—	549	16,072	16,072
2023 Q3	Value	7,008	—	236	320	181	7,745	7,745
2023 Q4	Value	5,451	—	143	1,084	147	6,824	7,109
2024 Q1	Value	4,152	27	147	1,735	468	6,529	6,529
2024 Q2	Value	3,270	—	848	2,583	657	7,359	7,391
2024 Q3	Value	11,877	300	634	997	959	14,767	15,344
2024 Q4	Value	10,397	444	151	—	2,567	13,559	14,006
2025 Q1	Value	11,972	—	3	—	2,095	14,069	15,439

Table continued.

Table F.2 (Continued) Other than high purity (<99.00 percent) silicon metal: Quarterly U.S. imports, by source and period

Unit values in dollars per short ton contained silicon

Period	Measure	Angola	Australia	Laos	Norway	Thailand	Subject sources	SUB less AO and TH
2022 Q1	Unit value	—	2,635	—	3,080	4,162	3,207	2,798
2022 Q2	Unit value	—	4,589	—	4,772	2,636	3,672	4,739
2022 Q3	Unit value	—	8,006	2,966	6,843	8,894	6,803	6,517
2022 Q4	Unit value	—	6,868	3,101	6,880	3,901	5,795	6,359
2023 Q1	Unit value	—	—	2,897	5,181	4,719	4,705	4,700
2023 Q2	Unit value	—	—	2,897	3,455	—	3,357	3,357
2023 Q3	Unit value	—	—	—	3,125	—	3,125	3,125
2023 Q4	Unit value	—	—	2,178	2,757	2,693	2,629	2,621
2024 Q1	Unit value	—	3,173	—	2,203	—	2,210	2,210
2024 Q2	Unit value	—	2,982	—	4,328	1,918	4,130	4,187
2024 Q3	Unit value	2,003	3,759	—	3,530	—	3,148	3,595
2024 Q4	Unit value	8,110	—	—	2,710	—	3,011	2,710
2025 Q1	Unit value	1,881	2,965	—	2,761	—	2,291	2,761

Table continued.

Table F.2 (Continued) Other than high purity (<99.00 percent) silicon metal: Quarterly U.S. imports, by source and period

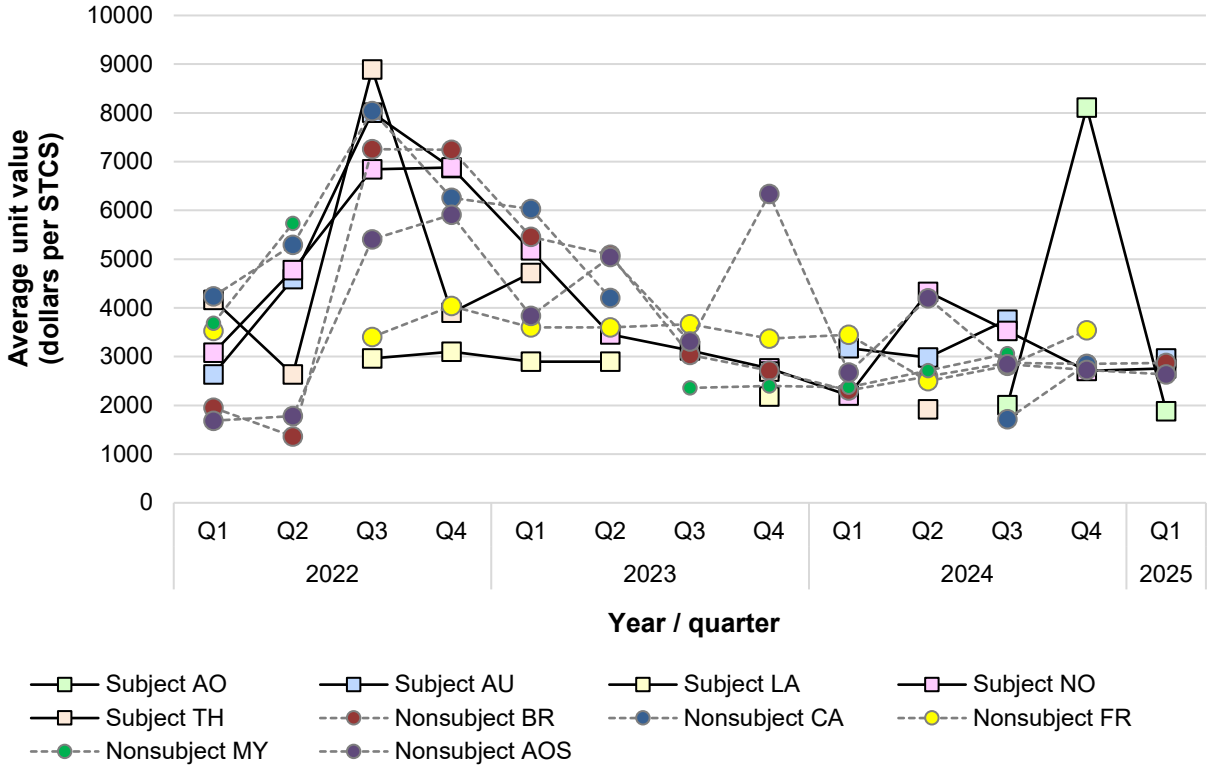
Unit values in dollars per short ton contained silicon

Period	Measure	Brazil	Canada	France	Malaysia	All other sources	Nonsubject sources	NON plus AO and TH
2022 Q1	Unit value	1,952	4,237	3,527	3,685	1,685	3,014	3,149
2022 Q2	Unit value	1,364	5,291	—	5,734	1,782	2,754	2,744
2022 Q3	Unit value	7,257	8,040	3,401	—	5,404	7,578	7,600
2022 Q4	Unit value	7,241	6,260	4,037	—	5,913	7,111	6,963
2023 Q1	Unit value	5,458	6,029	3,602	—	3,835	5,525	5,498
2023 Q2	Unit value	5,093	4,202	3,599	—	5,046	4,911	4,911
2023 Q3	Unit value	3,036	—	3,662	2,358	3,311	3,021	3,021
2023 Q4	Unit value	2,713	—	3,369	2,398	6,335	2,701	2,700
2024 Q1	Unit value	2,303	28,179	3,446	2,371	2,677	2,372	2,372
2024 Q2	Unit value	2,593	—	2,499	2,713	4,198	2,716	2,711
2024 Q3	Unit value	2,873	1,715	2,813	3,061	2,847	2,842	2,798
2024 Q4	Unit value	2,851	2,847	3,539	—	2,725	2,832	2,892
2025 Q1	Unit value	2,872	—	56,369	—	2,632	2,834	2,712

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2804.69.5000, accessed on May 12, 2025. Imports are based on the general imports data series. Value data are based on CIF values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—“.

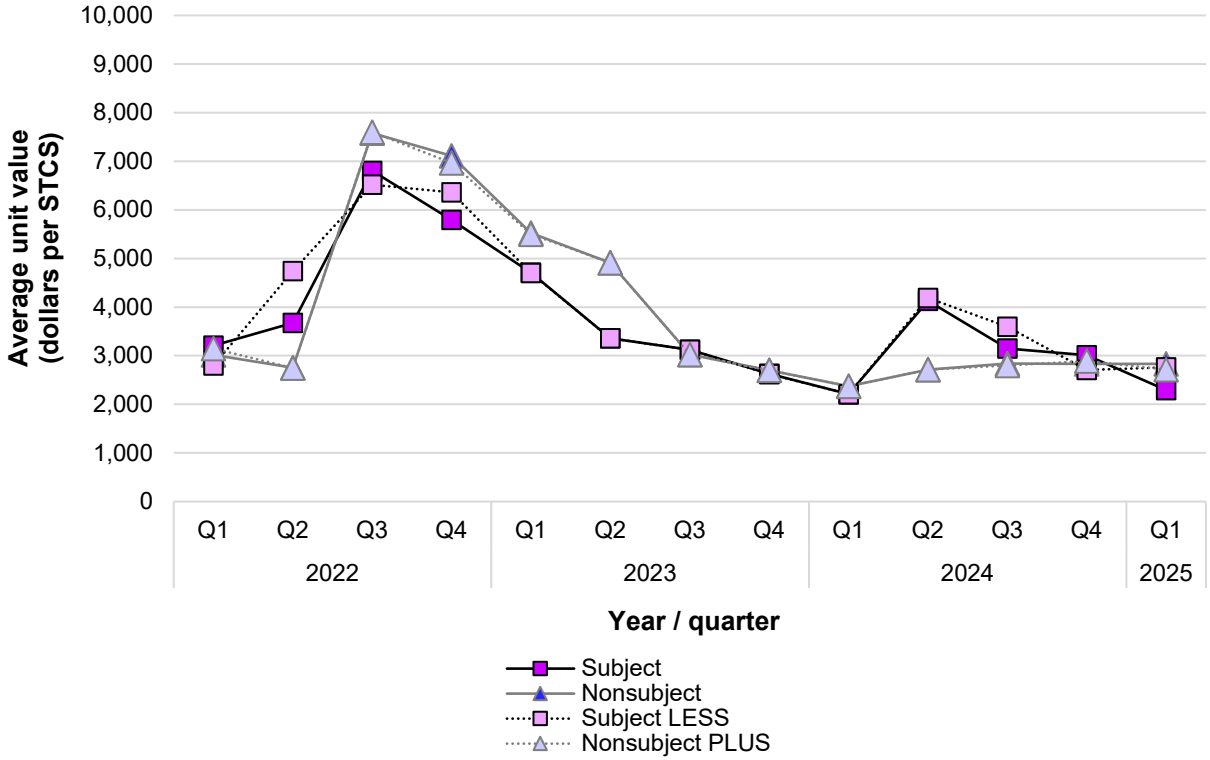
Figure F.3 Other than high purity (<99.00 percent) silicon metal: Quarterly U.S. imports, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2804.69.5000, accessed on May 12, 2025. Imports are based on the general imports data series. Value data are based on CIF values.

Note: This figure removes two outliers, one for Canada in Q1 2024, and for France Q1 2025.

Figure F.4 Other than high purity (<99.00 percent) silicon metal: Quarterly U.S. imports, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2804.69.5000, accessed on May 12, 2025. Imports are based on the general imports data series. Value data are based on CIF values.

Note: Subject LESS is subject sources less Angola and Thailand. Nonsubject PLUS is nonsubject sources plus Angola and Thailand.