Utility Scale Wind Towers from Malaysia

Investigation No. 701-TA-661 (Final)

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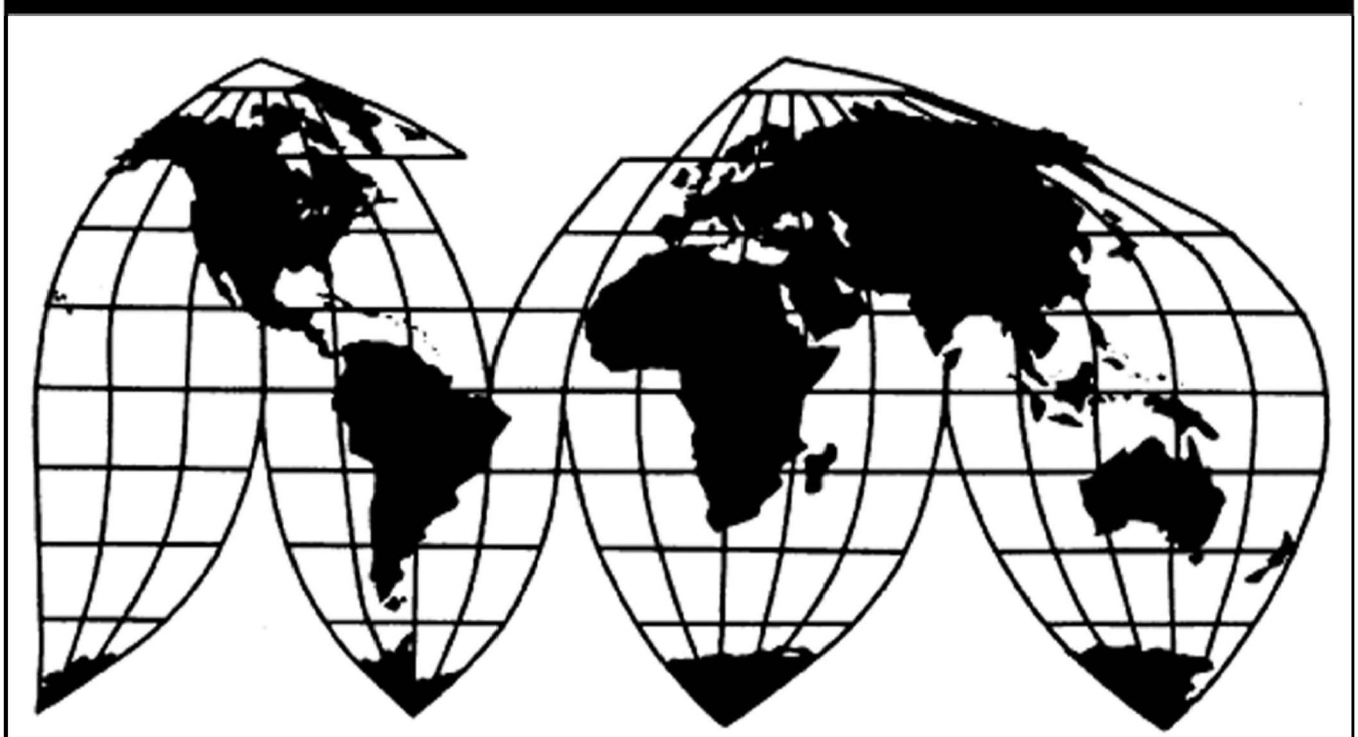
U.S. International Trade Commission



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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 701-TA-661 (Final)

Utility Scale Wind Towers from Malaysia

DETERMINATION

On the basis of the record[1] developed in the subject investigation, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that an industry in the United States is materially injured by reason of imports of utility scale wind towers from Malaysia, provided for in subheadings 7308.20.00 and 8502.31.00 of the Harmonized Tariff Schedule of the United States, that have been found by the U.S. Department of Commerce ("Commerce") to be subsidized by the government of Malaysia.[2]

BACKGROUND

The Commission instituted this investigation effective September 30, 2020, following receipt of petitions filed with the Commission and Commerce by the Wind Tower Trade Coalition (Arcosa Wind Towers Inc., Dallas, Texas; and Broadwind Towers, Inc., Manitowoc, Wisconsin). The Commission scheduled the final phase of the investigation following notification of a preliminary determination by Commerce that imports of utility scale wind towers from Malaysia were being subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)). Notice of the scheduling of the final phase of the Commission's investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of April 16, 2021 (86 FR 20197). Counsel for the Wind Tower Trade Coalition withdrew its previously filed request to appear at the hearing, after no other parties submitted a request to appear, and indicated a

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

[2] 86 FR 30593 (June 9, 2021).

willingness to submit written responses to any Commission questions in lieu of a hearing. Consequently, since no party to the investigation requested a hearing, the Commission canceled its hearing in connection with this investigation (86 FR 31730). Parties to this investigation responded to written questions posed by the Commission in their posthearing briefs.

Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of utility scale wind towers ("wind towers") from Malaysia found by the U.S. Department of Commerce ("Commerce") to be subsidized by the government of Malaysia.

I. Background

The petitioner, the Wind Tower Trade Coalition ("Petitioner" or "the Coalition"), which consists of two domestic producers of wind towers, filed petitions on September 30, 2020, seeking imposition of antidumping and countervailing duties on imports of wind towers from India and Malaysia and imposition of antidumping duties on imports of wind towers from Spain.[1] The investigation schedules became staggered when Commerce did not align its countervailing duty investigation with its antidumping duty investigation regarding imports from Malaysia[2] nor with its antidumping duty investigation regarding imports from Spain,[3] while it aligned its countervailing duty investigation regarding imports from India with that of its corresponding antidumping duty investigation, and postponed its antidumping duty investigation regarding Malaysia.[4] Commerce has issued its final countervailing duty determination regarding Malaysia.[5] As a result, the Commission must now make its determination in the countervailing duty investigation on wind towers from Malaysia (the "leading investigation") and will make its determinations in the other investigations at later dates following Commerce's final determinations. Pursuant to the statutory cumulation provision on staggered investigations, the record for each of these investigations will be the

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[1] The Coalition consists of two domestic producers, Arcosa Wind Towers Inc. ("Arcosa") and Broadwind Towers, Inc. ("Broadwind"). *See* Confidential Report, INV-TT-081 (June 25, 2021) ("CR") at I-1, Public Report ("PR") at I-1; Petition, Vol. I at Exhibit I-1.

[2] Utility Scale Wind Towers from Malaysia: Preliminary Determination of Sales Not Less Than Fair Value and Postponement of Final Determination, 86 Fed. Reg. 27828 (May 24, 2021); Utility Scale Wind Towers from Malaysia: Final Affirmative Countervailing Duty Determination, 86 Fed. Reg. 30593 (June 9, 2021) ("Commerce Final Malaysia CVD Determination"). Commerce will align antidumping and countervailing duty investigations filed on the same day and for the same product where the petitioner requests such an alignment. See 19 U.S.C. § 1671d (a)(1); see also 19 C.F.R. § 351.210(b)(4)(i). Petitioner did not request an alignment of these investigations.

[3] Commerce recently published its final antidumping duty determination regarding imports from Spain. *Utility Scale Wind Towers from Spain: Final Determination of Sales at Less Than Fair Value*, 86 Fed. Reg. 33656 (June 25, 2021). The Commission is scheduled to issue its determination in that investigation on August 9, 2021.

[4] Utility Scale Wind Towers from India: Preliminary Affirmative Countervailing Duty Determination, and Alignment of Final Determination With Final Antidumping Duty Determination, 86 Fed. Reg. 15897 (March 25, 2021); Utility Scale Wind Towers from Malaysia: Preliminary Determination of Sales Not Less Than Fair Value and Postponement of Final Determination, 86 Fed. Reg. 27828 (May 24, 2021).

[5] Commerce Final Malaysia CVD Determination, 86 Fed. Reg. at 30594.

same except that, prior to the Commission's countervailing and antidumping duty determinations regarding India, and antidumping duty determinations regarding Malaysia and Spain (the "trailing investigations"), the Commission shall include in the record the final Commerce antidumping and countervailing duty determinations, and the parties' final comments concerning the determinations.[6]

Petitioner filed prehearing and posthearing briefs, and final comments.[7] Three respondent parties also participated in the final phase of these investigations. Vestas Towers America, Inc. ("Vestas Towers"), a domestic producer of wind towers, and Vestas – American Wind Technology, Inc., a U.S. importer of subject merchandise (collectively "Vestas") submitted prehearing and posthearing briefs, and final comments. Siemens Gamesa Renewable Energy, a U.S. importer of subject merchandise, and Windar Renovables SL, a producer and exporter of subject merchandise in Spain (collectively, "SGRE"), filed a prehearing brief. The American Clean Power Association ("ACPA"), a trade association for the U.S. wind industry, submitted a prehearing written statement.

U.S. industry data for wind towers are based on the questionnaire responses of six firms, which accounted for all known U.S. production of wind towers in 2020.[8] U.S. import data are based on questionnaire responses received from seven U.S. importers, estimated to account for the vast majority of imports of wind towers from India, Malaysia, and Spain in 2020.[9] Foreign producer data are based on the questionnaire responses of six firms that account for the vast majority of production of wind towers in India and Spain in 2020 and *** production of wind towers in Malaysia in 2020.[10]

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[6] *See* 19 U.S.C. § 1677(7)(G)(iii). The record for the countervailing duty investigation with respect to Malaysia closed on June 29, 2021. Commerce is currently scheduled to issue its final antidumping and countervailing duty determinations in the investigations regarding India by August 2, 2021, and its final antidumping duty determination in the investigation regarding Malaysia on October 1, 2021. CR/PR at I-2.

[7] On June 7, 2021, counsel for Petitioner withdrew their request to appear at the hearing in the final phase of these investigations and indicated a willingness to submit written responses to any Commission questions in lieu of an actual hearing. No other parties had submitted a request to appear at the hearing. Consequently, since no party to the investigation requested a hearing, the Commission canceled the hearing that had been scheduled for June 10, 2021. *See Cancellation of Hearing for Final Phase Antidumping and Countervailing Duty Investigations: Utility Scale Wind Towers from India, Malaysia, and* Spain, 86 Fed. Reg. 31370 (June 15, 2021). Instead, the parties were requested to respond in posthearing briefs to written questions posed by the Commission.

[8] CR/PR at I-5.

[9] CR/PR at I-5 & IV-1.

[10] CR/PR at I-5.

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the "domestic like product" and the "industry."[11] 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."[12] 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."[13]

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.[14] 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."[15] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[16] 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.[17] No single factor is dispositive, and the Commission may

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[11] 19 U.S.C. § 1677(4)(A).

[12] 19 U.S.C. § 1677(4)(A).

[13] 19 U.S.C. § 1677(10).

[14] 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).

[15] Cleo Inc. v. United States, 501 F.3d 1291, 1298 (Fed. Cir. 2007); see also Hitachi Metals, Ltd. v. *United States*, Case No. 19-1289, slip op. at 8-9 (Fed. Circ. Feb. 7, 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

[16] *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).

[17] *See*, *e.g.*, *Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co.* 747 F. Supp. at 749 n.3 (("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally

consider other factors it deems relevant based on the facts of a particular investigation.[18] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[19]

B. Product Description

In its final determination, Commerce defined the imported merchandise within the scope of these investigations as:

> . . . {C}ertain wind towers, whether or not tapered, and sections thereof. Certain wind towers support the nacelle and rotor blades in a wind turbine with a minimum rated electrical power generation capacity in excess of 100 kilowatts and with a minimum height of 50 meters measured from the base of the tower to the bottom of the nacelle (*i.e.*, where the top of the tower and nacelle are joined) when fully assembled.
>
> A wind tower section consists of, at a minimum, multiple steel plates rolled into cylindrical or conical shapes and welded together (or otherwise attached) to form a steel shell, regardless of coating, end-finish, painting, treatment, or method of manufacture, and with or without flanges, doors, or internal or external components (*e.g.*, flooring/decking, ladders, lifts, electrical buss boxes, electrical cabling, conduit, cable harness for nacelle generator, interior lighting, tool and storage lockers) attached to the wind tower section. Several wind tower sections are normally required to form a completed wind tower.
>
> Wind towers and sections thereof are included within the scope whether or not they are joined with nonsubject merchandise, such as nacelles or rotor blades, and whether or not they have internal or external components attached to the subject merchandise.

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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).

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

[19] *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.").

> Specifically excluded from the scope are nacelles and rotor blades, regardless of whether they are attached to the wind tower. Also excluded are any internal or external components which are not attached to the wind towers or sections thereof, unless those components are shipped with the tower sections.[20]

Wind towers are large tubular steel towers that are part of wind turbines.[21] Wind turbines convert the kinetic energy of wind to electrical energy and are comprised of three main components – the nacelle, rotor, and tower; only the tower is subject to these investigations.[22] The nacelle houses the wind turbine's main power generation components (the gearbox, generator, and other components), while the rotor typically consists of three blades and the hub. The nacelle sits on top of the wind tower.[23] Wind towers within the scope definition are 50 meters or more in height and designed to support the nacelle and rotor blades in a wind turbine with a minimum rated electrical power generation capacity in excess of 100 kilowatts.[24] These towers are known in the industry as "utility scale" wind towers.[25]

C. Arguments of the Parties

Petitioner argues that the Commission should find a single domestic like product consisting of all wind towers, coextensive with the scope of the investigations.[26] It asserts that this would be consistent with the Commission's domestic like product definitions in prior proceedings involving utility scale wind towers.[27] No respondent party contests Petitioner's proposed definition of the domestic like product for purposes of the final phase of these investigations.[28]

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[20] CR/PR at I-12; Commerce Final Malaysia CVD Determination, 86 Fed. Reg. at 30594.

[21] CR/PR at I-14.

[22] CR/PR at I-14.

[23] CR/PR at I-14.

[24] CR/PR at I-12 & I-15; Petition, Vol. I at 8.

[25] *See e.g.*, Petition, Vol. I at 1-2.

[26] Petitioner's Prehearing Br. at 4.

[27] Petitioner's Prehearing Br. at 4.

[28] ACPA appears to argue that wind towers for use offshore should be "excluded" from the investigations by defining them to be a separate domestic like product. ACPA Prehearing Br. at 6. ACPA, however, did not provide comments on draft questionnaires in the final phase of these investigations, which it was required to do in order to pursue any arguments that the Commission should collect data so as to revisit the like product definition from the preliminary phase. 19 C.F.R. § 207.20(b). Moreover, based on the current record, no domestic firm specifically reported producing or shipping wind towers for offshore applications. As the Commission found in rejecting this same argument by ACPA's predecessor organization in the 2020 final phase investigations in wind towers from Canada, Indonesia, Korea, and Vietnam, the Commission cannot define a separate domestic like product for an article not produced domestically because in doing so it would be defining a separate domestic industry consisting of no domestic producers. *See, e.g.*, *Utility Scale Wind Towers from Canada, Indonesia, Korea, and*

D. Analysis

In its preliminary determinations, the Commission defined a single domestic like product coextensive with the scope. It found that all wind towers share common physical characteristics and uses; channels of distribution; manufacturing facilities, production processes, and employees; and producer and customer perceptions. Although it noted a lack of interchangeability and some differences in price among wind towers produced to different original equipment manufacturer ("OEM") specifications, the record did not indicate, nor had any party argued, that any clear dividing line exists among wind towers built to a particular design.[29]

There is no other information in the record in the final phase that suggests a definition different from that in the preliminary phase is warranted.[30] Therefore, based on the current record and in the absence of any contrary argument, we define a single domestic like product consisting of wind towers coextensive with the scope of the investigations.

III. Domestic Industry and Related Parties

A. Background

The statute defines the relevant industry as the "producers as a {w}hole 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."[31] 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.

Vietnam, Inv. Nos. 701-TA-627 and 731-TA-1458-1461 (Final), USITC Pub. 5101 at 9-10 & n.27. ACPA also urges the Commission to exclude offshore wind towers from these investigations (ACPA Prehearing Br. at 6), but the Commission has no authority to exclude products from Commerce's scope of investigation. *See e.g., USEC v. United States,* 34 Fed.Appx. 725, 730 (2002) ("The ITC may not modify the class or kind of imported merchandise examined by Commerce."). The Commission also has repeatedly rejected arguments that it should effectively "exclude" an article from the scope of the investigation, by defining that article to be a separate domestic like product. *See, e.g.,* USITC Pub. 5101 at 9-10 n.27; *Activated Carbon from China*, Inv. No. 731-TA-1103 (Final), USITC Pub. 3913 (April 2007) at 7-8 n.18; *Certain Cold-Rolled Steel Products from Australia, India, Japan, Sweden, and Thailand*, Inv. Nos. 731-TA-965, -971-72, -979, and -981 (Final), USITC Pub. 3536 (Sept. 2002) at 10 n.31, and USITC Pub. 3437 (Nov. 2001) (Preliminary) at 5 & n.20 ("...it is the role of Commerce, not the Commission, to determine the scope of the subject merchandise.").

[29] *Utility Scale Wind Towers from India, Malaysia, and* Spain, Inv. Nos. 701-TA-650-651 and 731-TA-1543-1545 (Preliminary) USITC Pub. 5146 (Dec. 2020) at 7-9 ("USITC Pub. 5146").

[30] CR/PR at I-14 to I-33.

[31] 19 U.S.C. § 1677(4)(A).

We must determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.[32] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[33]

In its preliminary determinations, the Commission found that two domestic producers – GRI Towers and Vestas Towers – met the statutory definition of a related party because they were related to an importer or a producer and exporter of subject merchandise.[34] The Commission, however, found that appropriate circumstances did not exist to exclude either producer, on the basis that both domestic producers had a primary interest in domestic production.[35]

In these final phase of these investigations, the record indicates that only Vestas Towers is a related party.[36] Vestas Towers is subject to potential exclusion because it is affiliated with a

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[32] *See Torrington Co. v. United States*, 790 F. Supp. 1161, 1168 (Ct. Int'l Trade 1992), *aff'd without opinion*, 991 F.2d 809 (Fed. Cir. 1993); *Sandvik AB v. United States*, 721 F. Supp. 1322, 1331-32 (Ct. Int'l Trade 1989), *aff'd mem*., 904 F.2d 46 (Fed. Cir. 1990); *Empire Plow Co. v. United States*, 675 F. Supp. 1348, 1352 (Ct. Int'l Trade 1987).

[33] The primary factors the Commission has examined in deciding whether appropriate circumstances exist to exclude a related party include the following:

(1) the percentage of domestic production attributable to the importing producer;

(2) the reason the U.S. producer has decided to import the product subject to investigation (whether the firm benefits from the LTFV sales or subsidies or whether the firm must import in order to enable it to continue production and compete in the U.S. market);

(3) whether inclusion or exclusion of the related party will skew the data for the rest of the industry;

(4) the ratio of import shipments to U.S. production for the imported product; and

(5) whether the primary interest of the importing producer lies in domestic production or importation. *Changzhou Trina Solar Energy Co. v. USITC*, 100 F. Supp.3d 1314, 1326-31 (Ct. Int'l. Trade 2015); *see also Torrington Co. v. United States*, 790 F. Supp. at 1168.

[34] USITC Pub. 5146 at 10.

[35] USITC Pub. 5146 at 10-12.

[36] GRI Towers is a wholly owned subsidiary of GRI Renewable Industries ("GRI Renewable"), which also is the parent company of GRI Towers India Private Limited ("GRI India"), a subject producer of wind towers in India. GRI Towers' U.S. Producer Questionnaire Response at I-7. GRI Renewable also owns a subject producer of wind towers in Spain, GRI Towers Sevilla, SL (Spain) ("GRI Spain"). *Id*. at I-5. In the preliminary determinations, the Commission found that GRI Towers qualified as a related party by virtue of its affiliation with GRI India, which reported exports of subject merchandise to the United States in its questionnaire response in the preliminary phase. USITC Pub. 5146 at 10 & n.43. In its final phase questionnaire response, however, GRI India did not report exports of subject merchandise to the United States during the period of investigation ("POI") and indicated that its preliminary phase questionnaire response inaccurately reported exports to the United States. CR/PR at Table VII-3. Since there is no information in the current record indicating that GRI Towers' parent company (GRI Renewable) or GRI Towers' affiliates in India (GRI India) or Spain (GRI Spain) exported subject merchandise to the United

U.S. importer of subject merchandise.[37] We discuss below whether appropriate circumstances exist to exclude Vestas Towers from the domestic industry pursuant to the related parties provision.

B. Arguments of the Parties

Petitioner. Although Petitioner states that both Vestas Towers and GRI Towers are related parties, it expressly declines to argue that appropriate circumstances exist to exclude either firm from the domestic industry.[38] Petitioner notes that the Commission found that appropriate circumstances did not exist to exclude any firms from the domestic industry in prior proceedings involving wind towers, including the preliminary phase of these investigations.[39]

Respondents. No respondents addressed the issue of related parties.

C. Analysis

Vestas Towers. Vestas Towers is the largest U.S. producer of wind towers, accounting for *** percent of reported U.S. production of wind towers in 2020.[40] During the period of investigation,[41] *** imported subject merchandise from ***.[42] Vestas Towers ***.[43]

Vestas Towers' U.S. production was considerably larger than its affiliate firm's imports during the period of investigation. Specifically, Vestas Towers' U.S. production was *** towers in 2018, *** towers in 2019, and *** towers in 2020.[44] During the period of investigation, *** imports of subject merchandise were *** towers in 2018, *** towers in 2019, and *** towers in 2020.[45] Its affiliate firm's subject imports from *** were equivalent to *** percent of Vestas

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States during the POI, GRI Towers does not qualify as a related party in the final phase of these investigations.

[37] Vestas Towers shares the same parent company as Vestas - American Wind Technology, Inc. ("Vestas American"), a U.S. importer of subject merchandise. Vestas Towers' U.S. Producer Questionnaire Response at I-5-6; Vestas American's U.S. Importer Questionnaire Response at I-3-5.

[38] Petitioner's Prehearing Br. at 4 n.18.

[39] Petitioner's Prehearing Br. at 4 n.18.

[40] CR/PR at Table III-1. In June 2021, it was reported that Vestas Towers sold its wind tower facility in Pueblo, Colorado to CS Wind. CR/PR at III-4.

[41] The period of investigation for this final phase investigation was calendar years 2018 through 2020.

[42] CR/PR at Table III-11.

[43] CR/PR at Table III-1.

[44] CR/PR at Tables III-4 & III-11. Vestas Towers' reported capacity utilization was *** percent in 2018, 2019, and 2020. CR/PR at Table III-4.

[45] CR/PR at Table III-11. *** imports of subject merchandise from Spain were *** towers in 2018, *** towers in 2019 and *** towers in 2020; its imports of subject merchandise from India were *** towers in 2018, *** towers in 2019, and *** towers in 2020; and its imports of subject merchandise from Malaysia were *** towers in 2018, *** towers in 2019, and *** towers in 2020. *Id*.

Towers' domestic production in 2018, *** percent of its domestic production in 2019, and *** percent of its domestic production in 2020.[46] Vestas Towers states that its affiliate firm imported subject merchandise ***.[47] Vestas Towers also reported significant capital expenditures totaling $*** in 2018, $*** in 2019, and $*** in 2020.[48] During the period of investigation, Vestas Towers ***.[49] Vestas Towers' domestic production and capital investments indicate that its primary interest is its domestic production operations rather than the importation by its affiliated firm. We therefore find that appropriate circumstances do not exist to exclude Vestas Towers from the domestic industry as a related party.

Accordingly, we define the domestic industry to include all U.S. producers of wind towers.

IV. Cumulation[50]

For purposes of evaluating the volume and effects for a determination 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;

(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;

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[46] CR/PR at Table III-11.

[47] CR/PR at Table III-12.

[48] Vestas Towers' U.S. Producer Questionnaire Response at III-13a.

[49] CR/PR at Table III-3.

[50] Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than three percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall generally be deemed negligible. 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B). The exceptions to this general provision are not pertinent here.

Questionnaire response data indicate that from September 2019 through August 2020, the most recent 12-month period for which data are available preceding the filing of the petition, subject imports from Malaysia with respect to the countervailing duty investigation accounted for *** percent of total imports. CR/PR at Table IV-3. Consequently, we find that subject imports from Malaysia are not negligible for purposes of the countervailing duty investigation.

(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.[51]

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.[52] Only a "reasonable overlap" of competition is required.[53]

A. Arguments of the Parties

Petitioner urges the Commission to cumulate subject imports from India, Malaysia, and Spain for purposes of its material injury analysis, as it did for its preliminary determinations.[54] Petitioner argues that wind towers from different sources are interchangeable as they are built to specifications set by purchasers.[55] Petitioner also maintains that domestically produced wind towers and subject imports from all sources are marketed and sold in the same geographic markets directly to the same OEMs.[56] Finally, Petitioner asserts that domestically produced wind towers and subject imports from all sources were simultaneously present in the U.S. market for substantial portions of the period of investigation.[57]

No respondent addressed cumulation for present material injury.

B. Analysis

We consider subject imports from India, Malaysia, and Spain on a cumulated basis because the statutory criteria for cumulation are satisfied. As an initial matter, Petitioner filed the antidumping/countervailing duty petitions with respect to all sources of subject imports on

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[51] *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).

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

[53] 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, S.A. v. United States*, 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.").

[54] Petitioner's Prehearing Br. at 5.

[55] Petitioner's Prehearing Br. at 5. Petitioner emphasizes that all domestic producers and the majority of U.S. importers/purchasers reported that U.S. produced wind towers are "always" or "frequently" interchangeable with wind towers from India, Malaysia, and Spain. *Id*. at 5-6.

[56] Petitioner's Prehearing Br. at 6-7.

[57] Petitioner's Prehearing Br. at 7-8.

the same day, September 30, 2020.[58] As discussed below, the record also supports finding a reasonable overlap of competition among wind towers produced in India, Malaysia, Spain, and the United States.

Fungibility. The record indicates that wind towers are produced to order to proprietary design specifications set by the OEMs, the manufacturers of wind turbines.[59] All responding U.S. producers reported that the domestic like product and wind towers from India, Malaysia, and Spain were "always" or "frequently" interchangeable in all comparisons.[60] The majority of U.S. importers/purchasers[61] reported that the domestic like product and wind towers from each subject source (India, Malaysia, and Spain) were "always" interchangeable in all comparisons and multiple importers/purchasers reported they were "sometimes" interchangeable.[62] In no instances when comparing the domestic product or wind towers from subject sources did any U.S. producer or importer/purchaser report that they were never interchangeable.[63]

Moreover, there is substantial overlap in size for shipments of the domestic like product and subject imports, and between wind tower imports from each subject country. In 2020, wind towers with a height of 81 to 90 meters accounted for the vast majority of U.S. shipments of the domestic like product, as well as the *** of U.S. shipments of subject imports from Spain.[64] Although the *** share of U.S. shipments of subject imports from Malaysia were of wind towers with a height of 91 to 100 meters, approximately *** of U.S. shipments of subject imports from Malaysia were also 81 to 90 meters in 2020.[65] While the *** of U.S. shipments of subject imports from India were of wind towers with a height of 91 to 110 meters, an appreciable quantity (*** percent) of U.S. shipments of subject imports from India were also 81 to 90 meters.[66] Thus, shipments of wind towers from all sources overlapped in the height range of 81 to 90 meters, as well as in the range of 91 to 100 meters.[67]

In comparisons between products from different sources concerning 20 purchasing factors, most responding importers/purchasers reported that U.S. and subject wind towers from Malaysia were comparable for 19 of 20 factors, while all responding importers/purchasers reported that U.S. and subject wind towers from India and Spain were comparable for all 20 factors.[68]

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[58] None of the statutory exceptions to cumulation applies.

[59] CR/PR at II-1.

[60] CR/PR at Table II-17.

[61] All U.S. OEM purchasers of wind towers also imported wind towers and, therefore, importers were issued a combined importer/purchaser questionnaire. *See* CR/PR at II-2 n.3.

[62] CR/PR at Table II-18.

[63] CR/PR at Tables II-17 & II-18.

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

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

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

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

[68] CR/PR at II-32 & Table II-14. With respect to one of the purchasing factors (*i.e.*, distance from U.S. source to project location), one purchaser reported that subject imports from Malaysia were superior to

Channels of Distribution. During the POI, the domestic like product and wind towers from all three subject countries were only sold to end users, the OEMs.[69]

Geographic Overlap. During the POI, U.S. producers reported shipments to 8 of 9 geographic regions, though a majority of their shipments were sold in the Lower Midwest and Central Southwest.[70] Shipments of subject imports from India and Malaysia were concentrated in the Lower Midwest and Central Southwest.[71] Shipments of subject imports from Spain were sold in 6 of 9 geographic regions, including substantial quantities in the Lower Midwest and Central Southwest.[72] Thus, the record reflects a substantial overlap of shipments of domestic product and subject imports from each country to the Central Southwest and Lower Midwest.[73]

Simultaneous Presence in Market. Information available in the current record indicates that the domestic like product and wind towers from all subject sources were present in the U.S. market in 2019 and 2020.[74]

Conclusion. The petitions were filed on the same day thereby satisfying the threshold requirement for cumulation. The record supports finding that subject imports from each subject country are fungible with the domestic like product and each other, that subject imports from each subject country and the domestic like product are sold in the same channels of distribution and in similar geographic markets, and have been simultaneously present in the U.S. market.

In light of the foregoing, we find that there is a reasonable overlap of competition between the domestic like product and imports from each subject country and between imports from each subject country. Therefore, we analyze subject imports on a cumulated basis for our analysis of whether the domestic industry is materially injured by reason of subject imports.

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the domestic like product and one purchaser reported that subject imports and the domestic like product were comparable. *Id*.

[69] CR/PR at II-2.

[70] CR/PR at II-2-3 and Table II-1.

[71] CR/PR at Table II-1.

[72] CR/PR at Table II-1.

[73] Border of entry data are available for towers and lattice masts under HTS statistical reporting number 7308.20.0020 (a basket category) based on official import statistics. CR/PR at Table IV-5. These data show that the vast majority of subject imports from India, Malaysia, and Spain in this category entered at the Southern border in 2020. *Id.*

[74] CR/PR at Table IV-6. Only subject imports from Spain were recorded in the first year of the POI, 2018. Subject imports from Spain were present in 35 of 36 months of the period of investigation between January 2018 and December 2020. *Id*. Subject imports from India were present in 22 of 36 months, mostly beginning in March 2019. *Id*. Subject imports from Malaysia were present in 15 of 36 months, beginning in May 2019. *Id*.

V. Material Injury by Reason of Subject Imports

A. Legal Standards

In the final phase of antidumping or countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[75] 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 operations.[76] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[77] In assessing whether 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.[78] 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."[79]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[80] 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.[81] 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.[82]

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[75] 19 U.S.C. §§ 1671d(b), 1673d(b). The Trade Preferences Extension Act of 2015, Pub. L. 114-27, amended the provision of the Tariff Act pertaining to Commission determinations of material injury and threat of material injury by reason of subject imports in certain respects. We have applied these amendments in these investigations.

[76] 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).

[77] 19 U.S.C. § 1677(7)(A).

[78] 19 U.S.C. § 1677(7)(C)(iii).

[79] 19 U.S.C. § 1677(7)(C)(iii).

[80] 19 U.S.C. §§ 1671d(a), 1673d(a).

[81] *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).

[82] 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.

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 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.[83] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[84] 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.[85] It is

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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).

[83] 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.

[84] 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.").

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

clear that the existence of injury caused by other factors does not compel a negative determination.[86]

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."[87] 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." [88] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[89]

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.[90] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[91]

B. Conditions of Competition

The following conditions of competition inform our analysis of whether there is material injury by reason of subject imports.

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[86] *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.").

[87] *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*.

[88] *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.

[89] *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.").

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

[91] *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.").

1. Captive Production Provision

In these investigations, transfers to related firms accounted for between *** percent and *** percent by quantity of the domestic industry's U.S. shipments of wind towers between 2018 and 2020.[92] Commercial shipments accounted for between *** percent and *** percent of the domestic industry's U.S. shipments in this period.[93] Accordingly, we consider the applicability of the statutory captive production provision.[94] [95]

The first criterion of the captive consumption provision concerns whether the domestic like product that is internally transferred for processing into downstream articles enters the merchant market for the domestic like product.[96] Only one producer, *** reported internal transfers, and no domestic producers in these investigations reported diverting wind towers that were to be internally consumed to the merchant market.[97] Therefore, this first criterion is satisfied.

The second criterion requires that the domestic like product be the predominant material input in the production of the downstream article. The Commission generally analyzes

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[92] CR/PR at Table III-7. We calculate internal transfers to include internal consumption and transfers to related firms. *See Bethlehem Steel Corp. v. United States*, 294 F. Supp. 2d 1359, 1364-1368 (Ct. Int'l Trade 2003).

[93] CR/PR at Table III-7.

[94] 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 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.

[95] Petitioner asserts that the captive production provision applies in these investigations but does not pursue the argument in light of the Commission's prior findings in similar wind towers investigations that the statutory requirements of the captive production provision are not satisfied. Petitioner's Prehearing Br. at 14 n.74. Vestas acknowledges that the threshold criterion for captive production applies in the final phase of these investigations, but argues that the second statutory criterion is not satisfied because wind towers are not the predominant input (in terms of cost) of the downstream product in which they are used (*i.e.*, wind turbines). Vestas Posthearing Br. at 2. Nevertheless, Vestas argues that the Commission should consider the merchant market as a relevant condition of competition in its material injury analysis. *Id.* at 2-3.

[96] *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).

[97] CR/PR at III-16.

the second criterion in terms of costs and considers the share of the internally transferred product in relation to the total raw material cost of the downstream product.[98]

Data in the record show that wind towers are not the predominant material input (in terms of cost) of the downstream product in which they are used, *i.e.*, wind turbines. Responding domestic producers indicated that wind towers accounted for *** percent of the finished cost of wind turbines.[99] As the wind tower simply supports the nacelle and rotor, which is the portion of the wind turbine that generates electricity, the wind tower also does not appear to be the main or most important part of the wind turbine.[100]

In light of the foregoing, we conclude that the criteria for application of the captive production provision are not satisfied in these investigations. However, as the Commission did in the preliminary phase of these investigations and in the prior investigations involving wind towers, we recognize captive production as a relevant condition of competition and consider the merchant market in our injury analysis along with the total market.

2. Demand Conditions

Wind towers are exclusively used in wind turbines for electrical power-generation projects.[101] Demand for wind towers is therefore derived from demand for wind turbines and is driven by the installation of wind turbines in large wind projects.[102] During the POI, installations of utility-scale wind turbines increased from 7,589 MW in 2018 to 14,200 MW in 2020.[103]

Federal and state government incentive programs are an important influence on demand for wind towers. Federal programs encourage the building of wind projects, thereby stimulating demand for wind towers. In particular, the federal production tax credit ("PTC"), which is a tax credit per kilowatt-hour of wind generation for the first ten years of a wind project, is a major driver of demand for wind towers.[104] The PTC has been renewed six times

[98] See generally, e.g., Polyethylene Terephthalate Film, Sheet and Strip from Brazil, China, Thailand, and the United Arab Emirates, Inv. Nos. 731-TA-1131-1134 (Final), USITC Pub. 4040 (October 2008) at 17 n.103; Polyethylene Terephthalate Film, Sheet, and Strip from India and Taiwan, Inv. Nos. 701-TA-415 and 731-TA-933-34 (Final), USITC Pub. 3518 (June 2002) at 11 & n.51. The Commission has construed "predominant" material input to mean the main or strongest element, and not necessarily a majority, of the inputs by value. See Polyvinyl Alcohol from Germany and Japan, Inv. Nos. 731-TA-1015-16 (Final), USITC Pub. 3604 (June 2003) at 15 n.69.

[99] CR/PR at III-16 and Table III-9.

[100] CR/PR at I-14 and Figure I-1.

[101] CR/PR at II-1 and II-12.

[102] CR/PR at II-1 and II-13. Demand for wind towers is inelastic, mainly because of the limited range of substitute products and the moderate cost share of wind towers in the final cost of wind turbines. CR/PR at II-12 and II-38.

[103] CR/PR at II-13 & Figure II-1.

[104] CR/PR at II-14.

since 2012, and was most recently extended in 2020 for 2021.[105] The value of the PTC changes from year to year; its value was 60 percent of the project in 2018, 40 percent in 2019, and then increased back to 60 percent in 2020.[106] Wind projects are also eligible for the investment tax credit ("ITC"); each renewal of the PTC also included a renewal of wind projects' eligibility for the ITC.[107] The ITC incentive levels for wind projects equaled 30 percent of a project's cost in 2009 but have been scaled down after 2016; the ITC is 18 percent for wind projects begun between December 2019 and January 1, 2021.[108] Additionally, the wind industry benefits from accelerated depreciation. Under the Modified Accelerated Cost-Recovery System ("MACRS"), wind projects are classified as five-year property, which allows depreciation over a shorter time period.[109]

Many states also have implemented renewable portfolio standards, which require utilities to source a certain share of energy from renewable sources by a particular date. As of April 2020, 30 states and the District of Columbia had such mandatory standards in place.[110]

Apart from government initiatives, other factors also impact demand for wind towers, such as wind energy's cost competitiveness with other energy sources. Although electricity in the United States is primarily supplied by conventional sources (*e.g.*, coal and natural gas), the share of electricity generated from renewable energy sources such as wind has been steadily increasing.[111] Wind energy accounted for 48 percent of all new electric generating capacity installed in the United States in 2020.[112] Moreover, the Energy Information Administration

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[105] Most of these renewals occurred after a lapse between the end of the previous PTC and the PTC renewal. In 2013, there was a two-day lapse before the PTC was extended. In 2014, 2015, and 2019 there were 11-month lapses before the PTC was extended. There was, however, no lapse for 2020 and 2021. After each of these lapses, the PTC has been retroactively extended. In December 2019 and 2020, the PTC was extended through the end of 2020 and 2021. Projects were eligible for the PTC as long as they started construction prior to the deadline and were completed within 5 years. Additionally, in May 2020, due to the COVID-19 pandemic, these incentives were extended (given "safe harbor") to allow projects an additional year to begin construction in order to qualify. The 2020 PTC will apply to projects completed through 2024. CR/PR at II-14.

[106] CR/PR at II-14 and Table II-3.

[107] CR/PR at II-15.

[108] CR/PR at II-15.

[109] The Economic Stimulus Act of 2008 made wind projects eligible for 50 percent depreciation in the first year (known as bonus depreciation). Bonus depreciation for wind was subsequently renewed several times, with first year depreciation ranging from 50 to 100 percent. According to current rules, wind projects completed by the end of 2017 were eligible for 50 percent first year bonus depreciation, while projects completed in 2018 are eligible for 40 percent and projects completed in 2019 are eligible for 30 percent. The December 2019 renewal of the PTC also allows MACRS to continue to apply to wind projects. CR/PR at II-16.

[110] CR/PR at II-18.

[111] CR/PR at II-19. Coal and natural gas accounted for almost two-thirds of all U.S. electricity generated in 2020. CR/PR at II-19. By comparison, wind energy accounted for 9 percent of total electricity generated in 2020. *Id*.

[112] CR/PR at II-19.

estimates that with tax credits included, the average levelized cost of energy[113] for new wind plants entering into service in 2023 will be lower than the averaged levelized cost of energy from other sources including geothermal, solar, and natural gas.[114]

The majority of market participants reported that demand for wind turbines increased since January 1, 2018.[115] Market participants attributed increasing U.S. demand trends to PTC/tax incentives and falling cost of wind energy relative to other sources of energy.[116] Apparent U.S. consumption in the total market for wind towers increased by 37.1 percent from 2018 to 2020, increasing from 3,762 wind towers in 2018 to 5,102 wind towers in 2019 and 5,156 wind towers in 2020.[117]

3. Supply Conditions

The U.S. market was supplied by domestically produced wind towers and imports from subject and nonsubject countries. The domestic industry was the largest supplier of wind towers to the U.S. market during the POI. Its share of apparent U.S. consumption declined throughout the POI, from *** percent in 2018 to *** percent in 2019 and *** percent in 2020.[118] In 2020, six firms accounted for all known U.S. production of wind towers in the United States, with one firm, Vestas Towers, transferring all of its wind towers to its affiliate OEM, ***, to produce the downstream product, wind turbines.[119] The domestic industry's capacity increased by 2.0 percent from 2018 to 2020; three domestic producers reported expansions and/or improvements in their production processes.[120] Four domestic producers also reported shutdowns and/or production curtailments during the POI.[121]

Cumulated subject imports were the smallest source of supply to the U.S. market in 2018 and 2019. By 2020, however, cumulated subject imports were virtually tied with nonsubject imports as the second largest source of supply to the U.S. market in terms of both quantity of U.S. shipments and share of the U.S. market. Cumulated subject imports' share of

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[113] The levelized cost of energy (LCOE) represents the per-kilowatt hour cost of building and operating a generated plant over an assumed financial life and duty cycle. CR/PR at II-21, n.39.

[114] CR/PR at II-21-22 and Table II-5 (Energy Information Administration's estimates).

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

[116] CR/PR at II-26.

[117] CR/PR at Table C-1. Apparent U.S. consumption of wind towers in the merchant market increased by *** percent from 2018 to 2020, increasing from *** towers in 2018 to *** towers in 2019 and *** towers in 2020. CR/PR at Table C-2.

[118] CR/PR at Tables IV-8 and C-1. The domestic industry's share of the merchant market declined from *** percent in 2018 to *** percent in 2019 and *** percent in 2020. CR/PR at Table C-2.

[119] CR/PR at III-16 and Table III-1.

[120] CR/PR at Tables III-3 and III-4. The domestic industry's capacity increased from 3,609 towers in 2018 to 3,687 towers in 2019, but then declined slightly to 3,682 towers in 2020. CR/PR at Table III-4.

[121] CR/PR at Table III-3.

apparent U.S. consumption for the total market increased throughout the POI, increasing from *** percent in 2018 to *** percent in 2019 and *** percent in 2020.[122]

Nonsubject imports' share of apparent U.S. consumption for the total market declined irregularly over the course of the POI, initially increasing from *** percent in 2018 to *** percent in 2019, but then declining to *** percent in 2020.[123] Leading sources of nonsubject imports during the POI include Canada, Indonesia, Korea, and Vietnam.[124] Imports of wind towers from these four countries were subject to final phase antidumping and/or countervailing duty investigations by the Commission in 2020; after the Commission found the domestic industry to be materially injured by reason of these imports, they became subject to orders issued by Commerce in August 2020.[125] The Commission had previously investigated imports of wind towers from China and Vietnam, and these imports became subject to antidumping and/or countervailing duty orders in 2013.[126]

4. Substitutability and Other Conditions

We find that there is a moderate-to-high degree of substitutability between domestically produced wind towers and wind towers imported from subject sources.[127] Wind towers produced to specifications provided by the OEMs are interchangeable with other towers produced to the same specifications.[128] As discussed above, all U.S. producers reported that the domestic like product and wind towers from India, Malaysia, and Spain were always or frequently interchangeable in all comparisons; the majority of importers/purchasers reported that the domestic like product and wind towers from India, Malaysia, and Spain were always interchangeable, although some importers/purchasers also reported that they were only sometimes interchangeable.[129]

Parties disagree as to the extent to which quality may limit substitutability between subject imports and domestically produced wind towers. All responding importers/purchasers

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[122] CR/PR at Tables IV-8 and C-1. Cumulated subject imports' share of apparent U.S. consumption in the merchant market increased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020. CR/PR at Table C-2.

[123] CR/PR at Tables IV-8 and C-1. Nonsubject imports' share of apparent U.S. consumption in the merchant market share also declined irregularly during the POI, increasing from *** percent in 2018 to *** percent in 2019, but then declining to *** percent in 2020. CR/PR at Table C-2.

[124] CR/PR at VII-22.

[125] CR/PR at I-6-7; *see also Utility Scale Wind Towers from Canada, Indonesia, Korea, and Vietnam*, Inv. Nos. 701-TA-627-629 and 731-TA-1458- 1461 (Final), USITC Pub. 5101 (Aug. 2020) ("USITC Pub. 5101").

[126] CR/PR at I-6; *see also Utility Scale Wind Towers from China and Vietnam*, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (First Review), USITC Pub. 4888 (Apr. 2019) ("USITC Pub. 4888"); *Utility Scale Wind Towers from China and Vietnam*, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final), USITC Pub. 4372 (Feb. 2013) ("USITC Pub. 4372").

[127] CR/PR at II-27.

[128] CR/PR at II-27.

[129] CR/PR at Tables II-17 and II-18.

reported that the domestic like product and subject imports from each source were comparable in terms of quality meeting industry standards and exceeding industry standards as well as product consistency.[130] Moreover, four of five responding importers/purchasers reported that domestically produced wind towers always or usually met minimum quality specifications.[131] Respondent Vestas claims, however, that Arcosa and Broadwind were not qualified with *** during the POI, with Arcosa unwilling or unable to agree to *** and Broadwind's ***;[132] Arcosa and Broadwind both dispute Vestas's claims, as discussed below.[133] While Vestas also emphasizes that *** reported that Broadwind did not meet certain qualification requirements in 2020,[134] Broadwind reported that *** was one of its ten largest customers during the POI and *** other domestic producers (***) reported that *** was their largest customer for wind towers in 2020.[135] Vestas does not dispute, and information available indicates, that U.S. producers, including Arcosa and Broadwind, are qualified with, and sell to, the other major OEMs.[136] On balance, we conclude that quality-related issues do not undermine our general conclusion that there is a moderate-to-high degree of substitutability between domestically produced wind towers and wind towers imported from subject sources.

The record also indicates that price is an important consideration in purchasing decisions. Purchasers generally identified price to be among their top three purchasing factors, along with availability and quality.[137] Three of five importers/purchasers identified price to be a very important purchasing factor, along with other considerations.[138] Two of five purchasers reported usually purchasing the lowest priced wind towers offered, while 3 of 5 purchasers reported sometimes purchasing the lowest price wind towers offered.[139] When comparing the domestic like product and wind towers from the subject countries, most responding domestic producers reported that factors other than price are only sometimes or never significant for all comparisons.[140] Although most importers/purchasers reported that non-price factors are

[130] CR/PR at Table II-14.

[131] CR/PR at II-32 and Tables II-14, II-19.

[132] *See, e.g.,* Vestas Prehearing Br. at 8; Vestas Final Comments at 2-3.

[133] *See, e.g.*, Petitioner's Posthearing Br. at 11-13 and Exhs. 6, 7.

[134] Vestas Prehearing Br. at 8; Vestas Final Comments at 3; GE U.S. Importer Questionnaire at IV-18.

[135] *See* U.S. Producer Questionnaire Responses at IV-19.

[136] *See, e.g.*, Arcosa U.S. Producer Questionnaire Response at IV-19; Broadwind U.S. Producer Questionnaire Response at IV-19; Petitioner's Posthearing Br., Exhibit 6 at 2, para. 3 (Fonville affidavit) and Exh. 7, para. 7 (Wroblewski affidavit).

[137] The most often cited top three factors firms consider in their purchasing decisions for wind towers were availability (including available capacity when needed, delivery schedule, and lead time) (5 firms), price/cost (including total delivered cost) (5 firms), and quality (including meeting specifications) (3 firms). Availability was the most frequently cited first-most important factor (cited by 2 firms), followed by price, quality, and qualification (1 firm each); availability was the most frequently reported second-most important factor (3 firms); and price and quality were the most frequently reported third-most important factors (2 firms each). CR/PR at Table II-11.

[138] CR/PR at Table II-12.

[139] CR/PR at II-28.

[140] CR/PR at Table II-20.

always significant for all country comparisons except between the domestic like product and subject imports from Malaysia,[141] a majority also reported that U.S. and subject wind towers from each source were comparable on most factors.[142]

Importers/purchasers reported that U.S. inland transportation costs accounted for anywhere from *** percent of the total delivered cost for domestically produced wind towers and anywhere from *** percent of the total delivered cost for subject imports of wind towers; all responding importers/purchasers reported that such costs were comparable for the domestic product and subject imports.[143] Importers/purchasers typically arrange transportation of domestically produced wind towers and imports of subject wind towers.[144]

As discussed above, U.S. producers' shipments during the POI were concentrated in the Lower Midwest and Central Southwest regions, albeit with significant quantities shipped to other regions.[145] Most of the cumulated subject imports were also shipped to the Lower Midwest and Central Southwest regions each year of the POI, with smaller volumes shipped to multiple other regions of the United States.[146]

Information available indicates that during the POI the vast majority of cumulated subject imports (more than 70 percent) were imported into the United States directly by OEMs.[147] There are a limited number of OEMs that purchase wind towers; the four largest OEMs *** account for virtually all purchases and imports of wind towers in the United States.[148]

Wind towers are usually produced to order, and U.S. importers/purchasers reported lead times ranging from 140 to 210 days for U.S. producers and 168 to 270 days for imports of subject wind towers.[149] Most U.S. producers reported selling wind towers through contracts;

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[141] CR/PR at Table II-21. In comparing the domestic like product and subject imports from Malaysia, three importers reported that non-price factors are sometimes significant while two importers reported that non-price factors are always significant. *Id*.

[142] CR/PR at II-32 and Table II-14.

[143] CR/PR at V-3, II-32, and Table II-14. During 2020, transportation costs for wind towers shipped from subject countries to the United States averaged 38.0 percent for India, 29.0 percent for Malaysia, and 24.4 percent for Spain. CR/PR at V-3. The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2020 and then dividing by the customs value based on the HTS statistical reporting number 7308.20.0020. CR/PR at V-3 n.3.

[144] Most domestic producers (5 of 6) reported that their customers typically arrange transportation of domestically produced wind towers, while all four responding importers/purchasers reported that they typically arrange transportation of domestically produced wind towers and most importers/purchasers (4 of 5) reported that they typically arrange transportation of subject wind towers. CR/PR at V-3.

[145] CR/PR at II-3, Table II-1, and Appendix L at Tables L-9-11. Domestic producers did not report any shipments to the Lower Southeast region during the POI, nor were any subject imports shipped to this region. *Id.*

[146] CR/PR at II-3, Table II-1, and Appendix L at Tables L-9-11. Importers/purchasers did not report shipments of subject imports in the Upper Southeast, Lower Southeast, or Other regions of the United States during the POI. *Id.*

[147] *Derived from* U.S. Importer' Questionnaires at II-5a, II-6a, and II-7a .

[148] CR/PR at II-2.

[149] CR/PR at II-27.

while most importers/purchasers reported purchasing domestically produced wind towers through contracts, they also reported purchasing or selling subject merchandise through spot sales.[150]

Steel plate is the primary raw material used in making wind towers, though other raw materials also account for a substantial portion of the cost of goods sold ("COGS").[151] During the POI, raw materials' share of COGS increased from 70.8 percent in 2018 to 72.8 percent in 2019 and 73.9 percent in 2020.[152] The domestic industry's ratio of raw material costs to net sales increased over the POI from 65.1 percent in 2018 to 66.2 percent in 2019 and 68.3 percent in 2020.[153]

Domestic producers use a variety of approaches to arrange for purchasing raw materials or passing through some portion of raw material costs.[154] Four of six responding U.S. producers reported at least some sales using conversion contracts with a pass-through mechanism for raw material costs; the usage of conversion contracts varied widely among individual producers.[155] Regardless of whether formal conversion contracts (*i.e.*, directed buys in which an OEM directs from whom to purchase the raw material and at what price) or other types of raw material procurement are used, conversion price[156] plays a role in the process for negotiating contracts for wind towers between domestic producers and their customers.[157] Producers Broadwind and Arcosa generally pass through raw material costs to their customers through directed buys or other arrangements.[158] Marmen states that its procurement process for raw materials varies

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[150] CR/PR at Table V-2. In 2020, U.S. producers reported that *** percent of domestically produced wind towers were sold through annual contracts and *** percent were sold through short-term contracts. *Id*. In 2020, U.S. importers/purchasers reported that *** percent of domestically produced wind towers were purchased through contracts (*i.e.*, *** percent using long-term contracts, *** percent using annual contracts, and *** percent using short-term contracts) and that *** percent of domestically produced wind towers were purchased through spot sales. *Id*. In 2020, U.S. importers/purchaser reported that *** percent of subject merchandise was sold through spot sales, *** percent of subject merchandise was sold using annual contracts, and *** percent of subject merchandise was sold using short-term contracts. *Id*.

[151] CR/PR at Table VI-1.

[152] CR/PR at Table VI-1. In the merchant market, raw materials' share of COGS increased irregularly over the POI, increasing from *** percent in 2018 to *** percent in 2019, but then declining to *** percent in 2020. CR/PR at Appendix J, Table J-2.

[153] CR/PR at Table VI-1. In the merchant market, the industry's ratio of raw material costs to net sales increased irregularly over the POI, increasing from *** percent in 2018 to *** percent in 2019, but then declining to *** percent in 2020. CR/PR at Appendix J, Table J-2.

[154] CR/PR at V-8-9 and VI-7-9.

[155] CR/PR at V-8. Two firms (***) reported 99 and 100 percent of their sales were under conversion contracts, while two firms (***) reported 2 and 3 percent of their sales, respectively, were under conversion contracts. *Id*. These conversion contracts typically exclude the primary material inputs from the negotiated conversion price. *Id*.

[156] Generally, the conversion price is equal to the net sales value minus raw material costs.

[157] *See, e.g.*, CR/PR at VI-5-9.

[158] CR/PR at VI-7-8.

by customer; it ***.[159] *** states that it generally procures raw materials to its own specifications and that customers are not involved in the procurement process.[160]

Since 2018, additional tariffs have been levied on the imported steel used to manufacture wind towers.[161] In March 2018, the President imposed additional 25 percent *ad valorem* steel tariffs on iron and steel articles imported on or after March 23, 2018 pursuant to Section 232 of the Trade Expansion Act of 1962 ("Section 232 tariffs").[162] U.S. producers' responses were mixed in terms of how Section 232 tariffs affected raw material costs for wind towers; most U.S. importers reported increased raw material costs as a result of the Section 232 tariffs.[163] The record indicates that prices for steel plate generally increased in 2018, declined in 2019, and then fluctuated within a narrow range in 2020.[164]

While tariffs under Section 301 of the Trade Act of 1974 have not been imposed on subject imports of wind towers, they have been applied to nonsubject wind towers and certain other raw materials from China used to produce wind towers, including steel plate.[165] These duties are an additional 25 percent *ad valorem* on wind towers and 15 percent *ad valorem* on raw materials (reduced to 7.5 percent in 2020).[166]

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."[167]

The volume of cumulated subject imports increased by *** percent overall during the POI, from *** wind towers in 2018 to *** wind towers in 2019 and *** wind towers in 2020.[168] The volume of cumulated subject imports rose at a faster rate than the 37.1 percent increase in

[159] CR/PR at VI-8-9.

[160] CR/PR at VI-9. Although *** did not provide a detailed description of its procurement process for raw materials, *** reports directly purchasing raw materials from a supplier. CR/PR at VI-8. *** states that its procurement process for raw materials varies on a case-by-case basis depending on the particular customer. *Id*. Similarly, *** states that its procurement process for raw materials is done on a project-by-project basis. *Id*.

[161] CR/PR at I-14.

[162] CR/PR at I-14.

[163] CR/PR at V-2-3. Two U.S. producers reported the Section 232 tariffs did not change raw material costs for wind towers, two producers reported that Section 232 tariffs caused the cost of raw materials to fluctuate, and two producers reported that the Section 232 tariffs increased raw material costs. CR/PR at V-2. Five of seven responding importers/purchasers (including all of the OEMs) reported the Section 232 tariffs had increased the overall cost of raw materials for wind towers. CR/PR at V-2-3.

[164] CR/PR at Figure V-1.

[165] *See* CR/PR at I-13.

[166] *See* CR/PR at I-13-14.

[167] 19 U.S.C. § 1677(7)(C)(i).

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

apparent U.S. consumption in the total market from 2018 to 2020,[169] and cumulated subject imports gained market share. As a share of total apparent U.S. consumption, cumulated subject imports' market share increased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020.[170]

Based on the foregoing, 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.

D. Price Effects of Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of the 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.[171]

As addressed in section IV.B.4. above, the record indicates that there is a moderate-to-high degree of substitutability between domestically produced wind towers and the subject imports produced to OEM specifications and that price is one of several important factors in purchases. Also as explained above, there are relatively few U.S. purchasers of wind towers and most of them import wind towers directly for their own use rather than buying from an importer.

We have examined several sources of information in our underselling analysis, including pricing data, import purchase cost data, purchase event data,[172] and responses by purchasers to the Commission's lost sales/lost revenue questions. Five U.S. producers provided usable

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[169] CR/PR at Table C-1. In the merchant market, apparent U.S. consumption increased by *** percent from 2018 to 2020. CR/PR at Table C-2.

[170] CR/PR at Tables IV-8 and C-1. Cumulated subject imports' share of the U.S. merchant market increased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020. CR/PR at Table C-2.

[171] 19 U.S.C. § 1677(7)(C)(ii).

[172] In the final phase of these investigations, the Commission requested firms provide purchase event data, such as bid data or requests for proposals for specific wind tower purchases, which is compiled in Appendix H of the Staff Report. *** provided bid data for a specific project for which it considered both domestically produced wind towers and subject wind towers. CR/PR at Appendix H-7-8 and Table H-2. ***. CR/PR at Appendix H-8 and Tables H-3-5. ***. CR/PR at Appendix H-7 n.2. Based upon the limited information provided in purchaser questionnaires, coverage for the bid data could not be calculated. CR/PR at Appendix H-7 n.3. Given the limited information in the record in these investigations concerning bid data, and particularly given the alternative option of using pricing and purchase cost data discussed below, which has a relatively high level of coverage, we rely primarily on the purchase cost and pricing data for our underselling analysis.

quarterly f.o.b. pricing data for four pricing products. [173] Reported pricing data account for *** percent of U.S. producers' U.S. shipments of wind towers in 2020.[174]

As explained above, importers are primarily OEMs that use the wind towers in their production of wind turbines rather than sell the subject imports to unrelated purchasers. Therefore, the Commission requested that firms that imported wind towers from the subject countries for their own use provide quarterly purchase cost data for the four pricing products instead of importers' sales price data.[175] *** importers reported usable import purchase cost data.[176] Purchase cost data reported by these firms accounted for approximately *** percent of subject imports from India in 2020,[177] *** percent of subject imports from Malaysia in 2020,[178] and *** percent of subject imports from Spain in 2020.[179]

The record contains 27 instances of quarterly import purchase cost data.[180] The purchase costs of cumulated subject imports were lower than the prices for the domestic like product in 20 of 27 instances, or 74.1 percent of available quarterly comparisons.[181] On a volume basis, 88.4 percent of the subject imports in the purchase cost data were in the quarters when purchase costs of cumulated subject imports were lower than prices for the domestic like product, *i.e.*, there were 799 units of cumulated subject imports in quarters in which their purchase costs were lower than the prices for the domestic like product, and 105 units of cumulated subject imports in quarters in which their purchase costs were higher than the prices for the domestic like product.[182] In instances in which the purchase cost of subject imports was below the domestic selling price, the differential ranged from *** percent to *** percent, and averaged 20.2 percent.[183]

We recognize that the import purchase cost data may not reflect the total cost of importing and therefore requested that direct importers provide additional information regarding the costs and benefits of directly importing wind towers. However, no importers reported additional costs beyond landed-duty costs for importing wind towers.[184] Given the

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[173] CR/PR at V-10. Not all firms reported pricing for all products for all quarters. The four pricing products are differentiated by height and defined as follows: Product 1**.**-- Wind towers, more than 80 meters but less than or equal to 90 meters in height; Product 2.-- Wind towers, more than 90 meters but less than or equal to 100 meters in height; Product 3.-- Wind towers, more than 100 meters but less than or equal to 110 meters in height; and Product 4.— Wind towers, more than 110 meters but less than or equal to 120 meters in height. CR/PR at V-10 and Tables V-3-6.

[174] CR/PR at V-10.

[175] CR/PR at V-10-12 and n.22 and Tables V-3-6.

[176] CR/PR at V-10. Not all firms reported purchase costs for all products for all quarters.

[177] CR/PR at V-10.

[178] CR/PR at V-10-11. ***. CR/PR at V-11 n.25.

[179] CR/PR at V-11.

[180] CR/PR at V-23 & Tables V-3-9.

[181] CR/PR at Tables V-8-9.

[182] CR/PR at Tables V-8-9.

[183] CR/PR at Table V-8.

[184] CR/PR at V-12. No importer estimated savings from importing directly. Importers were also asked whether the import cost (both excluding and including additional costs) of wind towers they

large differential between the import purchase costs and prices for the domestic like product, and the absence of any additional reported importing costs, we find that cumulated subject imports were priced lower than the domestic like product in the vast majority of comparisons.

Questionnaire responses regarding lost sales also indicate that subject imports were being sold at lower prices than the domestic product during the POI. Of five responding importers/purchasers, *** reported that they had purchased imported wind towers from at least one subject country instead of the domestic product during 2018-2020.[185] Three of these four purchasers reported that subject import prices were lower than prices of the domestic like product.[186] While each of these purchasers provided nonprice reasons for purchasing subject imports in their questionnaire responses, based on closer scrutiny of other evidence in the record, we find that price played a role in their decisions to purchase subject imports.[187]

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imported are lower than the price of purchasing wind towers from a U.S. producer or importer. *Id.* Only *** and *** responded, reporting that their imports were not less expensive than if the firm purchased from U.S. importers or U.S. producers. *Id.*

[185] CR/PR at Table V-11. The three importer/purchasers that reported that the subject imports they purchased instead of domestic wind towers were lower priced than the domestic product accounted for all reported subject imports during the POI. *Id*.

[186] CR/PR at Table V-11. Purchasers ***, who accounted for the vast majority of subject imports, *** reported that subject imports were priced lower than the domestic product. *Id*.

[187] CR/PR at Table V-11. Specifically, we recognize that no purchasers reported that price was a primary reason for purchasing wind towers from subject countries rather than the domestic like product. CR/PR at Table V-11. *** reported that domestic industry capacity limitations led them to import subject merchandise during the POI (CR/PR at Table V-11), but, as discussed in our impact analysis below, the domestic industry had substantial available unused capacity in every year of the POI, including in 2019 and 2020, in both the Lower Midwest and Central Southwest regions where competition between the domestic like product and cumulated subject imports was concentrated. Moreover, most responding importers/purchasers (including ***) reported that the domestic like product and subject imports from each source were comparable for almost all purchasing factors, including availability and immediate availability of capacity. *See e.g.*, CR/PR at II-32 and Table II-14; *** U.S. Importer/Purchaser Questionnaires at IV-27. *** purchased substantial quantities of wind towers from the domestic industry throughout the POI, but increased its purchases of wind towers from subject sources from 2019 to 2020 as it decreased purchases from the domestic industry. *See, e.g.*, *** U.S. Importer/Purchaser Questionnaire at IV-1.

***. CR/PR at Table V-11. As discussed in detail below, however, Arcosa and Broadwind both dispute ***. *** does not raise any issues with other domestic producers. Moreover, all responding importers/purchasers (including ***) reported that the domestic like product and subject imports from each source were comparable in terms of quality meeting industry standards and quality exceeding industry standards, while four of five responding purchasers reported that domestically produced wind towers always or usually met minimum quality specifications. CR/PR at II-32 and Tables II-14 and II-19.

Finally, ***, which accounted for a *** percentage of cumulated subject imports during the POI (*derived from* U.S. Importer' Questionnaires at II-5a, II-6a, and II-7a), states that project site location led it to import subject merchandise during the POI. See CR/PR at Table V-11. However, *** did not provide any explanation or examples in its questionnaire response, and, as noted above, domestic producers reported available production capacity throughout the POI. Moreover, all responding

Given the record evidence demonstrating that purchase costs for large quantities of cumulated subject imports were substantially lower than the prices for the domestic like product, as well as purchaser responses with respect to alleged lost sales showing subject imports were priced lower than domestic product, and in light of our findings that there is a moderate-to-high degree of substitutability between the domestic like product and cumulated subject imports and that price is an important factor in purchasing decisions for wind towers, we find that underselling by cumulated subject imports was significant. The underselling resulted in lost market share and sales by the domestic industry. Over the POI, cumulated subject imports gained *** percentage points of market share at the expense of the domestic industry, and an additional *** percentage points of market from nonsubject imports, some of which the domestic industry reasonably could have been expected to gain as nonsubject imports declined significantly following the imposition in 2020 of antidumping orders on imports from Canada, Indonesia, Korea, and Vietnam.[188]

We have also examined available data on price trends. The domestic industry's prices fluctuated but increased overall for two of the three pricing products for which pricing data was reported covering 2018-2020, including the two highest volume pricing products for U.S. producers of wind towers. For Product 1, which was by far the domestic industry's highest volume product, U.S. producer prices increased by *** percent between the first quarter of 2018 and the fourth quarter of 2020.[189] For Product 2, which was the domestic industry's second-highest volume product, U.S. producer prices increased by *** percent between the first quarter of 2018 and the fourth quarter of 2020.[190] U.S. producer prices for Product 3 declined by *** percent between the third quarter of 2018 and the fourth quarter of 2020.[191] U.S. producer prices for Product 4 were reported only for the last three-quarters of 2019, a period that is too limited to reveal discernible pricing trends for that particular pricing product.[192] Likewise, reported subject import purchase cost data for all four pricing products are too sporadic for any trends to be discernible.[193]

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purchasers reported that the domestic like product and subject imports from each source were comparable in terms of distance from U.S. source to project location and delivery time. CR/PR at II-32 and Table II-14. In sum, other evidence on the record does not support the importer/purchaser assertions that limited domestic availability was forcing importers/purchasers to seek out subject imports. Indeed, the notion that subject imports were filling a significant supply gap in the market is inconsistent with their pervasive underselling during the POI.

[188] Between 2018 and 2019, cumulated subject imports gained *** percentage points of U.S. market share directly at the expense of U.S. producers. CR/PR at Table C-1. Between 2019 and 2020, cumulated subject imports gained an additional *** percentage points of U.S. market share directly at the expense of U.S. producers. *Id*.

[189] CR/PR at Tables V-3 and V-7.

[190] CR/PR at Tables V-4 and V-7.

[191] CR/PR at Tables V-5 and V-7.

[192] CR/PR at Tables V-6 and V-7.

[193] CR/PR at Tables V-3-7.

We also consider whether cumulated subject imports prevented price increases that otherwise would have occurred to a significant degree. The domestic industry faced increasing costs during the POI, due in large part to increasing steel plate costs.[194] These cost increases occurred as apparent U.S. consumption experienced a substantial increase from 2018 to 2019 and remained strong in 2020, increasing by 37.1 percent over the POI.[195] Despite the substantial increase in apparent U.S. consumption, the domestic industry's ratio of COGS-to-net sales increased over the POI. The domestic industry's COGS-to-net-sales ratio initially declined from 91.9 percent in 2018 to 90.9 percent in 2019, but then increased to 92.5 percent in 2020, for an increase of 1.6 percentage points from 2019 to 2020, and for an overall increase of 0.6 percentage points from 2018 to 2020.[196] The rise in the COGS-to-net-sales ratio in 2020 was driven by a rise in raw material costs that was not met by a commensurate rise in net sales value.[197] In addition to these rising costs, the domestic industry had an incentive to raise prices in 2020 given the Commission's prior finding that the domestic producers' prices were suppressed in 2019, when the industry's COGS-to-net-sales ratio was already high (90.9 percent in 2019).[198] With the *** percent increase in apparent U.S. consumption from 2018 to 2019 and the further increase to peak levels for the POI in 2020,[199] the industry should have been able to raise prices sufficiently to cover its increasing costs. Instead, in 2020, the domestic industry's COGS-to-net-sales ratio increased in the total market,[200] and five domestic producers reported having to lower prices or roll back announced price increases.[201]

Given the significance of raw material costs and the nature of contracting in this industry, including the role of conversion prices in negotiations among market participants discussed above, we have also examined developments with respect to conversion prices and costs.[202] The domestic industry's effective conversion price increased from $111,134 in 2018 to

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[194] From 2018 to 2020 raw material costs per wind tower increased by 14.8 percent in the total market. CR/PR at Table VI-2. Five of seven responding importers/purchasers reported that the section 232 tariffs led to an increase in raw material costs; ***. CR/PR at V-2. Two U.S. producers reported that the section 232 tariffs led to an increase in raw material costs, although two producers reported the section 232 tariffs did not change raw material costs and two producers reported that the tariffs caused the cost of raw materials to fluctuate. *Id*.

[195] CR/PR at Table C-1. Total apparent U.S. consumption was 35.6 percent higher during 2019 than 2018, and peaked in 2020 when it was 37.1 percent higher than 2018. *Id.*

[196] CR/PR at Tables VI-1 and C-1. In the merchant market, the domestic industry's COGS-to-net-sales ratio increased from *** percent in 2018 to *** percent in 2019, but then declined to *** percent in 2020, for an overall decline of *** percentage points. CR/PR at Table C-2.

[197] *See* CR/PR at Table VI-1.

[198] The Commission made this prior finding in its final determinations concerning imports of wind towers from Canada, Indonesia, Korea, and Vietnam. *See Utility Scale Wind Towers from Canada, Indonesia, Korea, and Vietnam (Final)*, Inv. Nos. 701-TA-627-629 & 731-TA-1458-1461, USITC Pub. 5101 at 36-39 (Aug. 2020).

[199] CR/PR at Table C-1.

[200] CR/PR at Tables VI-1 and C-1.

[201] CR/PR at V-25.

[202] The fact that some manufacturers had conversion contracts or other contractual provisions that passed through raw material costs in some form does not necessarily insulate them from cost-price

$113,631 in 2019, but then declined to $110,046 in 2020.[203] Furthermore, the spread between the domestic industry's effective conversion price and conversion cost increased from 23.2 percent in 2018 to 26.9 percent in 2019, but then declined to 23.8 percent in 2020.[204] As with the overall COGS-to-net-sales ratio, the continuing increase in apparent U.S. consumption in 2020 should have afforded the industry the ability to price its wind towers in a way that covered its costs. Instead, the domestic industry's effective conversion price declined by $3,585 per tower from 2019 to 2020, and the spread between the domestic industry's effective conversion price and conversion costs declined by 3.1 percentage points over the same period.[205] In light of the evidence discussed above regarding the domestic industry's COGS-to-net-sales ratio and the industry's conversion prices over the POI, and given the strong demand conditions also discussed above, we find that shipments of cumulated subject imports, which increased in volume from just *** units in 2018 to *** units in 2020,[206] and significantly undersold the domestic like product, suppressed domestic producer prices to a significant degree.

In sum, we find that the underselling by cumulated subject imports was significant. The significant underselling resulted in cumulated subject imports' capture of significant sales and market share at the expense of the domestic industry. We further find that cumulated subject imports prevented price increases that otherwise would have occurred to a significant degree. We therefore find that cumulated subject imports had significant price effects on the domestic industry.

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squeezes resulting from raw material price increases. As the cost of raw materials rises in a pass-through type contract, the total price to the customer would increase, making the product more expensive in relation to competitors' products unless other components of the price are cut. We note that the spread between conversion prices and conversion costs declined in 2020, which suggests that even if raw material costs were being passed through, domestic producers' ability to pass through costs other than raw materials appears to have decreased. In other words, even if raw material costs were being passed through, prices to customers would not increase by the same amount as the increase in raw material costs, as domestic producers absorbed other costs. This is consistent with the rising COGS-to-net-sales ratio discussed above, and indicative of a cost-price squeeze. The decline in the industry's effective conversion price and reduced spread between conversion prices and costs is also consistent with Petitioner's assertion that domestic producers primarily negotiate with customers over the conversion price and that these prices have been under pressure from low-priced subject imports. *See* Petitioner's Posthearing Br., Exhibit 1 (Answers to Commissioner Questions) at 25-27.

[203] *Derived from* CR/PR at Table VI-1. The effective conversion price is calculated as the industry's per-unit net sales value less raw material costs. *See, e.g.*, Petitioner's Posthearing Br. at Exh. 13.

[204] *Derived from* CR/PR at Table VI-1; CR/PR at VI-14 n.37. The conversion cost is calculated as the sum of the industry's direct labor and other factory costs. *See, e.g.*, Petitioner's Posthearing Br. at Exh. 13.

[205] *Derived from* CR/PR at Table VI-1. Moreover, Vestas itself acknowledges that ". . . significant increases in raw material costs during the POI affected the operating return of the domestic producers, and the producers could not fully pass the increased costs through the downstream supply chain." Vestas Posthearing Br. at 8.

[206] CR/PR at Table C-1.

E. Impact of Subject Imports

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[207] 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 debts, research and development, 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."[208]

Many of the domestic industry's production- and employment-related factors and financial indicators either declined, or increased at significantly lower rates than the increase in apparent U.S. consumption during the period of investigation. Although apparent U.S. consumption for the total market increased by 37.1 percent from 2018 to 2020,[209] the domestic industry's production increased overall by only 6.8 percent over the same period, increasing from 2,672 wind towers in 2018 to 2,895 wind towers in 2019, but then declining to 2,854 wind towers in 2020.[210] Similarly, the domestic industry's capacity increased overall by only 2.0 percent during 2018-2020, increasing from 3,609 wind towers in 2018 to 3,687 wind towers in 2019, but then declining somewhat to 3,682 wind towers in 2020.[211] Producers' U.S. shipments increased overall by just 1.7 percent during 2018-2020, increasing from 2,698 wind towers in 2018 to 2,964 wind towers in 2019, but then declining to 2,744 wind towers in 2020.[212] The domestic industry's market share declined by *** percentage points from 2018 to 2020, declining from *** percent in 2018 to *** percent in 2019 and *** percent in 2020.[213]

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[207] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

[208] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[209] CR/PR at Table C-1. Apparent U.S. consumption for the merchant market increased by *** percent from 2018 to 2020. CR/PR at Table C-2.

[210] CR/PR a.t Tables III-4 and C-1. In the merchant market, the domestic industry's production increased from *** wind towers in 2018 to *** wind towers in 2019 and *** wind towers in 2020. *Derived from* CR/PR at Tables C-1 and C-3.

[211] CR/PR at Tables III-4 and C-1. In the merchant market, the domestic industry's capacity increased overall by *** percent from 2018 to 2020, increasing from *** wind towers in 2018 to *** wind towers in 2019 and *** wind towers in 2020. *Derived from* CR/PR at Tables C-1 and C-3.

[212] CR/PR at Tables III-6 and C-1. In the merchant market, U.S. producers' commercial shipments increased by *** percent from 2018 to 2020, increasing from *** wind towers in 2018 to *** wind towers in 2019, but then declining to *** wind towers in 2020. CR/PR at Table C-2.

[213] CR/PR at Tables IV-8 and C-1. In the merchant market, the domestic industry's market share declined by *** percentage points from 2018 to 2020, declining from *** percent in 2018 to *** percent in 2019 and *** percent in 2020. CR/PR at Table C-2.

The industry's capacity utilization increased by 3.5 percentage points from 2018 to 2020, increasing from 74.0 percent in 2018 to 78.5 percent in 2019, but then declining to 77.5 percent in 2020.[214] Its end-of-period inventories increased by *** percent from 2018 to 2020, while end-of-period inventories as a share of total shipments increased by *** percentage points over the same period.[215]

Like the factors relating to industry output, the domestic industry's employment indicators either declined or lagged well behind the large growth in apparent U.S. consumption over the POI. Productivity and hourly wages declined from 2018 to 2020, and the number of production-related workers ("PRWs"), total wages paid, and total hours worked showed modest increases over the course of the POI.[216]

Although the domestic industry's sales revenues and gross profit increased overall during the POI,[217] most of the domestic industry's other financial indicia fluctuated but declined

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[214] CR/PR at Tables III-4 and C-1. In the merchant market, the domestic industry's capacity utilization increased overall by *** percentage points from 2018 to 2020, increasing from *** percent in 2018 to 69.2 percent in 2019, but then declining to *** percent in 2020. *Derived from* CR/PR at Tables C-1 and C-3.

[215] End-of-period inventories declined from *** wind towers in 2018 to *** wind towers in 2019, but then increased to *** wind towers in 2020. CR/PR at Tables III-10 and C-1. End-of-period inventories as a share of total shipments declined from *** percent in 2018 to *** percent in 2019, but then increased to *** percent in 2020. *Id*. In the merchant market, end-of-period inventories declined from *** wind towers in 2018 to *** wind towers in 2019, but then increased to *** wind towers in 2020. *Derived from* CR/PR at Tables C-1 and C-3. In the merchant market, end-of-period inventories as a share of total shipments declined from *** percent in 2018 to *** percent in 2019, but then increased to *** percent in 2020. *Id*.

[216] The domestic industry's productivity measured in towers per 10,000 hours increased from 6.2 in 2018 to 6.3 in 2019 and then declined to 6.1 percent in 2020. Hourly wages declined from $36.66 in 2018 to $35.04 in 2019, but then increased to $35.97 in 2020. The domestic industry's number of production-related workers increased from 2,051 in 2018 to 2,145 in 2019 and 2,205 in 2020. Total wages paid increased from $156.7 million in 2018 to $160.1 million in 2019 and $169.5 million in 2020. Total hours worked increased from 4.3 million hours in 2018 to 4.6 million hours in 2019 and 4.7 million hours in 2020. CR/PR at Table C-1.

In the merchant market, the domestic industry's hourly wages declined from $*** in 2018 to $*** in 2019, but then increased to $*** in 2020. Productivity in the merchant market was *** percent in 2018 and 2019, but then declined to *** percent in 2020. PRWs in the merchant market increased from *** in 2018 to *** in 2019 and *** in 2020. Total hours worked in the merchant market increased from *** hours in 2018 to *** hours in 2019 and *** hours in 2020. Total wages paid in the merchant market increased from $*** in 2018 to $*** in 2019 and $*** in 2020. *Derived from* CR/PR at Tables C-1 and C-3.

[217] The domestic industry's net sales revenues increased from $858.4 million in 2018 to $995.1 million in 2019, but then declined to $954.0 million in 2020. CR/PR at Tables VI-1 and C-1. In the merchant market, the domestic industry's net sales revenues increased from $*** in 2018 to $*** in 2019, but then declined to $*** in 2020. CR/PR at Table C-2.

The domestic industry's gross profit increased from $69.7 million in 2018 to $90.5 million in 2019, but then declined to $71.9 million in 2020. CR/PR at Tables VI-1 and C-2. In the merchant market, the overall from 2018 to 2020. Operating income declined by *** percent from 2018 to 2020, initially increasing from $*** in 2018 to $*** in 2019, but then declining to $*** in 2020.[218] Net income declined by *** percent from 2018 to 2020, initially increasing from $*** in 2018 to $*** in 2019, but then declining to $*** in 2020.[219] As a ratio to net sales, the domestic industry's operating income declined overall by 0.7 percentage points from 2018 to 2020, increasing from 5.2 percent in 2018 to 6.3 percent in 2019, but then declined to 4.5 percent in 2020.[220] The industry's net income margin declined overall by 1.2 percentage points from 2018 to 2020, declining from 5.9 percent in 2018 to 5.7 percent in 2019 and 4.7 percent in 2020.[221] Capital expenditures declined by 36.5 percent over the course of the POI, declining from $26.7 million in 2018 to $17.3 million in 2019 and $17.0 million in 2020.[222] Research and development expenses fluctuated but declined overall by *** percent from 2018 to 2020, increasing from $*** in 2018 to $*** in 2019, but then declining to $*** in 2020.[223] Four of six responding producers reported that the subject imports had negative effects on investment and growth and development.[224]

The domestic industry would reasonably have been expected to have substantially more sales, shipments, and revenues given the 37.1 percent increase in apparent U.S. consumption from 2018 to 2020 and in light of the antidumping and countervailing duty investigations and resulting orders imposed on the leading sources of nonsubject imports in 2020.[225] Instead, while U.S. shipments by U.S. producers increased by only 1.7 percent over the POI, and declined by 7.4 percent from 2019 to 2020, shipments of cumulated subject imports increased by *** percent and significantly undersold the domestic like product throughout the POI.[226] As a result, rather than gain market share as nonsubject imports retreated from the market, the

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domestic industry's gross profit increased from $*** in 2018 to $*** in 2019 and $*** in 2020. CR/PR at Table C-2.

[218] CR/PR at Tables VI-1 and C-1. In the merchant market, the domestic industry's operating income increased from $*** in 2018 to $*** in 2019 and $*** in 2020. CR/PR at Table C-2.

[219] CR/PR at Tables VI-1 and C-1. In the merchant market, the domestic industry's net income increased from $*** in 2018 to $*** in 2019 and $*** in 2020. CR/PR at Table C-2.

[220] CR/PR at Tables VI-1 and C-1. In the merchant market, the domestic industry's operating income margin increased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020. CR/PR at Table C-2.

[221] CR/PR at Tables VI-1 and C-1. In the merchant market, the domestic industry's net income margin declined overall by *** percentage points from 2018 to 2020, declining from *** percent in 2018 to *** percent in 2019, but then increasing to *** percent in 2020. CR/PR at Table C-2.

[222] CR/PR at Tables VI-3 and C-1. In the merchant market, the domestic industry's capital expenditures declined overall by *** percent from 2018 to 2020, declining from $*** in 2018 to $*** in 2019, but then increasing to $*** in 2020. CR/PR at Table C-2.

[223] In the merchant market, the domestic industry's research and development were $*** in 2018, $*** in 2019, and $*** in 2020. CR/PR at Table C-2.

[224] CR/PR at Table VI-9.

[225] CR/PR at Table C-1; *see Id.* at I-7 and II-10. In the merchant market, apparent U.S. consumption increased by *** percent from 2018 to 2020. CR/PR at Table C-2.

[226] CR/PR at Tables IV-2, C-1.

domestic industry lost *** percentage points of market share from 2019 to 2020, as cumulated subject imports gained *** percentage points from 2019 to 2020.[227] Had the domestic industry been able to further increase its output and sales given its unused production capacity and the substantial increase in apparent U.S. consumption, and had the industry's prices not been significantly suppressed by low-priced subject imports, the domestic industry's production, shipments and revenues would have been higher and the industry's financial performance would have been materially better than it actually recorded.[228] Instead, the domestic industry suffered declines in virtually all its financial indicators over the POI, particularly from 2019 to 2020.[229]

Vestas argues that the domestic industry was unable to satisfy the growth in apparent U.S. consumption over the POI due to capacity limitations, most notably in the Lower Midwest and Central Southwest regions where majorities of both domestically produced wind towers and subject imports were shipped.[230] The record shows, however, that the domestic industry had substantial unused capacity in every year of the POI, including in 2019 and 2020, including in both these regions.[231] Indeed, the domestic industry's production and U.S. shipments of wind towers actually declined from 2019 to 2020, which is inconsistent with the contention that

[227] CR/PR at Table C-1. In the merchant market, the domestic industry lost *** percentage points of market share from 2019 to 2020 while cumulated subject imports gained *** percentage points of share over the same period. CR/PR at Table C-2.

[228] We observe that the Trade Preferences Extension Act of 2015 added to the statute a provision stating that the existence of a profitable industry, or one whose performance has improved, does not foreclose an affirmative material injury determination. *See* 19 U.S.C. § 1677(7)(J); *see also Certain Hot-Rolled Steel Flat Products from Australia, Brazil, Japan, Korea, the Netherlands, Turkey, and the United Kingdom,* Inv. Nos. 701-TA-545-547 and 731-TA-1291-1297 (Final), USITC Pub. 4638 at 44 n.219 (Sept. 2016); *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 35 n.182 (Sept. 2016).

[229] CR/PR at Table C-1.

[230] *See, e.g.*, Vestas Prehearing Br. at 14-15; Vestas Posthearing Br., Answers to Commission's Questions in Lieu of Hearing. at 10-11; Vestas Final Comments at 2; CR/PR at Table II-1.

[231] The domestic industry as a whole reported capacity utilization of 74.0 percent in 2018, 78.5 percent in 2019, and 77.5 percent in 2020. CR/PR at Table III-4. Further, domestic producers' three facilities in the Central Southwest region (Abilene, TX; Amarillo, TX; and Tulsa, OK) operated at even lower capacity utilization rates, whether calculated on an annual or quarterly basis. *See, e.g.*, Petitioner's Posthearing Br., Exhibit 1 (Answers to Commissioner Questions) at 2-3, and Exhibit 5. The domestic industry's average capacity utilization for the three facilities in the Central Southwest region was *** percent in 2020, which was lower than the *** percent they reported in 2019. *Derived from* U.S. Producers' Questionnaires at II-7; Petitioner's Posthearing Br. at Exhibit 5. Similarly, domestic producers' three facilities in the Lower Midwest region (Clinton, IL; Newtown, IA; and Manitowoc, WI) operated at lower capacity utilization rates than the domestic industry as a whole, whether calculated on an annual or quarterly basis. S*ee* Petitioner's Posthearing Br., Exhibit 1 (Answers to Commissioner Questions) at 3-4, and Exhibit 5. The domestic industry's average capacity utilization for the three facilities in the Lower Midwest region was *** percent in 2020, which was lower than the *** percent they reported in 2019. *Derived from* Petitioner's Posthearing Br. at Exhibit 5.

there were significant domestic supply constraints.[232] The record also indicates that OEMs imported subject wind towers at ports located in the South, which is more remote from wind project sites than these available domestic facilities; thus, geographic proximity cannot explain OEM decisions to source subject imports, at least in the Lower Midwest and Central Southwest regions.[233]

Vestas also argues that the quality of domestically produced wind towers led it and other OEMs to import subject merchandise.[234] However, both Arcosa and Broadwind dispute Vestas's claims that they failed to qualify with these purchasers.[235] Notwithstanding Vestas's assertion that Broadwind did not meet certain qualification requirements for *** in 2020,[236] Broadwind reported that *** was one of its ten largest customers during the POI and *** other domestic producers (***) reported that *** was their largest customer for wind towers in 2020.[237] Moreover, Vestas does not dispute, and information available confirms that U.S. producers, including Arcosa and Broadwind, are qualified with, and sell to, the other major OEMs.[238] In addition, as noted above, all responding importers/purchasers reported that the domestic like product and subject imports from each source were comparable in terms of quality meeting or exceeding industry standards, and four of five responding purchasers reported that domestically produced wind towers always or usually met minimum quality specifications.[239] Thus, the record does not support Vestas's argument that quality was the reason that the domestic industry was unable to supply a materially greater volume of wind towers during the POI, including 2020.

Given these considerations, the record in the final phase of these investigations indicates that the domestic industry was in a position to supply a materially greater volume of

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[232] CR/PR at Tables C-1 and C-2 (showing U.S. production declining by 1.4 percent from 2019 to 2020, U.S. shipments in the total market declining by 7.4 percent, and U.S. shipments in the merchant market declining by *** percent).

[233] In 2020, approximately *** percent of cumulated subject imports entered the United States through ports located in the South. CR/PR at Table IV-5. In that same year, more than two-thirds of cumulated subject imports (approximately *** percent) were shipped to the Lower Midwest and Central Southwest regions, the two regions where the majority of U.S. producers' shipments were concentrated in 2020, and where domestic producers also had unused capacity throughout the POI. CR/PR at Appendix L, Tables L-9-11. Thus, the record shows that geography does not limit competition to the extent that respondents claim when cumulated subject imports are sufficiently low-priced.

[234] *See, e.g.,* Vestas Prehearing Br. at 8; Vestas Final Comments at 2-3; CR/PR at Table V-11.

[235] *See, e.g.*, Petitioner's Posthearing Br. at 11-13 and Exhs. 6, 7. According to an affidavit from a Broadwind company official, Broadwind became qualified for Vestas in October 2015 and remained qualified throughout the POI. *See* Petitioner's Posthearing Br., Exh.7 at Paras. 2-3. Arcosa's Vice President and General Counsel asserts in an affidavit that Arcosa had been in the process of becoming qualified with Vestas since 2016, and that Vestas ended negotiations for qualifying Arcosa in 2020 over terms for cancellation and postponement of deliveries rather than quality issues with Arcosa. *See* Petitioner's Posthearing Br., Exh. 6 at 2-3, Para. 3.

[236] Vestas Prehearing Br. at 8; Vestas Final Comments at 3; GE U.S. Importer Questionnaire at IV-18.

[237] *See* U.S. Producer Questionnaire Responses at IV-19. *** CR/PR at Tables H-4 and H-5.

[238] *See, e.g.*, Petitioner's Posthearing Br. at 11-13 and Exhs. 6, 7.

[239] *See, e.g.*, CR/PR at II-32, II-37 and Tables II-14 and II-19.

wind towers than it did during the POI, even if it could not have necessarily supplied all of the increase in apparent U.S. consumption for wind towers that occurred during 2020.[240]

Further, as a result of significant underselling by the increasing volume of cumulated subject imports, the domestic industry was unable to raise prices sufficiently to cover increasing costs despite substantial increases in apparent consumption, as demonstrated by its elevated COGS-to-net-sales ratio and declining effective conversion price ratio, particularly in the total market, as previously discussed. The increasing volume of cumulated subject imports adversely affected the domestic industry's prices, resulting in a reduced financial performance during the latter portion of the POI.[241]

We also have considered the role of factors other than subject imports to ensure that we are not attributing injury from such other factors to subject imports. As discussed above, apparent U.S. consumption was robust throughout the POI, increasing by 37.1 percent from 2018 to 2020.[242] The growth in apparent U.S. consumption does not explain the industry's reduced market share and its inability to achieve materially greater output, nor its worsening financial performance over the POI.

We have also considered the role of nonsubject imports in the U.S. market. As discussed above, nonsubject imports were generally the second largest source of supply to the U.S. market during the POI.[243] Nonsubject imports' share of apparent U.S. consumption increased from *** percent in 2018 to *** percent in 2019, but then declined to *** percent in 2020, for a decline of *** percentage points in the last full year of the POI (2019-2020) and an

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[240] We note that domestic industry had substantial excess capacity, including in the Central Southwest, regardless of whether *** is included in industry's total capacity. CR/PR at Table III-5; Arcosa U.S. Producer Questionnaire at II-3a and II-7. The *** region and not the Central Southwest region where respondents claim capacity was unavailable. Two other facilities in the Upper Midwest region had excess capacity; Broadwind's facility in Manitowoc, WI and Ventower's facility in Monroe, MI operated at modest capacity utilization rates during 2019 and 2020. *Derived from* Petitioner's Posthearing Br. at Exhibit 5.

[240] *See* CR/PR at Tables C-1 and C-2.

[241] We recognize that the industry experienced increases in some of its financial indicators in the merchant market from 2019 to 2020, however these increases were fairly modest in light of the strong apparent U.S. consumption and the fact that antidumping and countervailing duty orders were imposed on the leading sources of nonsubject imports in mid-2020. CR/PR at Table C-2 and II-10. Imposition of these orders on a large volume of nonsubject imports presumably would benefit domestic producers as these imports retreated from the market, yet, as noted above, the domestic industry's U.S. shipments in the merchant market declined from 2019 to 2020 and domestic producers lost an additional *** percentage points of market share in the merchant market as the increase in subject import volume exceeded the decline in nonsubject import volume. CR/PR at Table C-2.

[242] Apparent U.S. consumption in the total market for wind towers increased from 3,762 wind towers in 2018 to 5,102 wind towers in 2019 and 5,156 wind towers in 2020. CR/PR at Table C-1. Apparent U.S. consumption of wind towers in the merchant market increased by *** percent from 2018 to 2020, increasing from *** wind towers in 2018 to *** wind towers in 2019 and *** wind towers in 2020. CR/PR at Table C-2.

[243] CR/PR at Tables IV-8 & C-1.

overall decline of *** percentage points from 2018 to 2020.[244] As nonsubject imports lost *** percentage points of market share in 2020, cumulated subject imports increased their share by *** percentage points. In light of these considerations, including the decline in nonsubject imports and the substantial volumes and increase in volumes of cumulated subject imports and their pervasive underselling, nonsubject imports do not explain the magnitude of the domestic industry's inability to achieve materially greater output, market share, and revenues over the course of the POI, particularly in 2020.

We therefore find that cumulated subject imports had a significant impact on the domestic industry.

VI. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports from Malaysia found by Commerce to be subsidized by the government of Malaysia.

[244] CR/PR at Table IV-13. Nonsubject imports' share of apparent U.S. consumption in the merchant market increased from *** percent in 2018 to *** percent in 2019, but then declined to *** percent in 2020, for a decline of *** percentage points in the last full year of the POI (2019-2020) and an overall decline of *** percentage points from 2018 to 2020. CR/PR at Table C-2.

Part I: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by the Wind Tower Coalition (Arcosa Wind Towers Inc. ("Arcosa") (Dallas, Texas) and Broadwind Towers, Inc. ("Broadwind") (Manitowoc, Wisconsin)) alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized imports of utility scale wind towers ("wind towers")[1] from India and Malaysia and less-than-fair-value ("LTFV") imports of wind towers from India, Malaysia, and Spain. The following tabulation provides information relating to the background of these investigations.[2] [3]

[1] See the section entitled "The subject merchandise" in Part I 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] Appendix B presents the Petitioners' withdrawal of its request to appear at the Commission's hearing. On June 4, 2021 counsel for Wind Tower Trade Coalition filed its request to appear at the hearing. No other parties submitted a request to appear at the hearing. On June 7, 2021, counsel withdrew their request to appear at the hearing. Counsel indicated a willingness to submit written responses to any Commission questions in lieu of an actual hearing. Consequently, the public hearing in connection with these investigations was cancelled. 86 FR 31730, June 15, 2021.

Effective date	Action
September 30, 2020	Petitions filed with Commerce and the Commission; institution of Commission investigations (85 FR 63137, October 6, 2020)
October 7, 2020	Commerce’s extension of initiation (85 FR 65028, October 14, 2020)
November 9, 2020	Commerce’s notice of initiation of countervailing duty investigations (85 FR 73019, November 16, 2020) and antidumping duty investigations (85 FR 73023, November 16, 2020)
December 4, 2020	Commission’s preliminary determinations (85 FR 79217, December 9, 2020)
December 28, 2020	Commerce’s postponement of preliminary countervailing duty determinations regarding India and Malaysia (85 FR 84302 December 28, 2020)
March 12, 2021	Commerce’s postponement of preliminary antidumping duty determinations regarding India and Malaysia (86 FR 14071, March 12, 2021)
March 25, 2021	Commerce’s preliminary countervailing duty determinations regarding India and Malaysia (86 FR 15897, March 25, 2021; and 86 FR 15887, March 25, 2021); scheduling of final phase of Commission investigations (86 FR 20197, April 16, 2021)
April 2, 2021	Commerce’s preliminary antidumping duty determination regarding Spain (86 FR 17354, April 2, 2021)
May 24, 2021	Commerce’s preliminary antidumping duty determinations regarding India and Malaysia (86 FR 27828, May 24, 2021; and 86 FR 27829, May 24, 2021)
June 9, 2021	Commerce’s final countervailing duty determinations regarding Malaysia (86 FR 30593, June 9, 2021)
June 10, 2021	Commission’s hearing – Canceled (86 FR 31730, June 15, 2021)
June 25, 2021	Commerce’s final antidumping duty determinations regarding Spain (86 FR 33656, June 25, 2021)
July 8, 2021	Commission’s vote (Malaysia CVD)
July 27, 2021	Commission’s views (Malaysia CVD)
October 6, 2021	Scheduled date for Commerce’s final countervailing duty and antidumping duty determinations regarding India
October 1, 2021	Scheduled date for Commerce’s final antidumping duty determination regarding Malaysia

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 I of this report presents information on the subject merchandise, subsidy/dumping margins, and domestic like product. Part II of this report presents information on conditions of competition and other relevant economic factors. Part III presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts IV and V present the volume of subject imports and pricing of domestic and imported products, respectively. Part VI presents information on the financial experience of U.S. producers. Part VII 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

Wind towers are vertical support components of utility scale wind turbines used in electrical power generation projects. The leading U.S. producers of wind towers are (in alphabetical order) Arcosa, Marmen Energy co ("Marmen"), and Vestas Towers America Inc ("Vestas"), while leading producers of wind towers in India, Malaysia, and Spain include ***, respectively. In 2020, *** was the leading U.S. importer of wind towers from India, Malaysia, and Spain. Leading importers of product from nonsubject countries (South Korea and Mexico) include ***. Wind towers are purchased by wind turbine manufacturers which are sometimes referred to as Original Equipment Manufacturers ("OEMs") and consist of ***. Four wind-turbine manufacturing firms (***) accounted for nearly all purchases and much of the imports of wind towers in the United States.

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

Apparent U.S. consumption of wind towers totaled approximately 5,156 wind towers ($1.8 billion) in 2020. Currently, six firms are known to produce wind towers in the United States. U.S. producers' U.S. shipments of wind towers totaled 2,744 wind towers ($954.6 million) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled *** wind towers ($***) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled *** wind towers ($***) in 2020 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. Except as noted, U.S. industry data are based on questionnaire responses of six firms that accounted for all known U.S. production of wind towers during 2020. U.S. imports are based on questionnaire responses of seven firms that accounted for the vast majority of subject imports from all three subject countries in 2020. Foreign producer data are based on questionnaires responses of six firms that accounted for the majority of production in India and Spain and *** production in Malaysia.

Previous and related investigations[6]

Wind towers have been the subject of prior related antidumping and countervailing duty investigations. On December 29, 2011, petitions were filed with Commerce and the Commission by Broadwind Towers, Inc., Manitowoc, Wisconsin; DMI Industries, Fargo, North Dakota; Katana Summit LLC, Columbus, Nebraska; and Trinity Structural Towers, Inc., Dallas, Texas alleging that the U.S. industry was materially injured and threatened with material injury by reason of subsidized and LTFV imports from China, and LTFV imports from Vietnam. On December 26, 2012, Commerce published in the *Federal Register* its notice of determinations that imports of wind towers from China and Vietnam were being sold at LTFV and were subsidized by the government of China. The Commission determined on February 8, 2013 that the domestic industry was materially injured or threatened with material injury by reason of LTFV imports of wind towers from China and Vietnam and subsidized imports of wind towers from China. On February 15, 2013, Commerce issued its antidumping duty orders on wind towers from China and Vietnam with the final weighted-average dumping margins ranging from 44.99 percent to 70.63 percent for China and 51.54 percent to 58.54 percent for Vietnam.

In the course of litigation at the Court of International Trade, Commerce published a *Notice of Court Decision Not in Harmony with the Final Determination* and revised CS Wind Group's dumping margin to 17.02 percent, effective May 21, 2015. Commerce subsequently concluded its first administrative review of the Vietnam antidumping duty order and revised CS Wind Group's margin a second time, finding it to be de minimis, effective September 15, 2015.

Following further litigation at the Court of Appeals for the Federal Circuit, on March 29, 2017, Commerce published a second *Notice of Court Decision Not in Harmony with the Final Determination*, this time excluding merchandise that is produced and exported by CS Wind Group from the antidumping duty order on imports from Vietnam.

In the most recent five-year review of these orders, the Commission determined that revocation of the countervailing duty order on utility scale wind towers from China and the antidumping duty orders on utility scale wind towers from China and Vietnam would be likely to lead to continuation or recurrence of material injury.[7]

On July 9, 2019, petitions were filed by the Wind Tower Trade Coalition (Arcosa and Broadwind) alleging that an industry in the United States was materially injured and threatened

[6] Unless otherwise noted, this information is based on Utility Scale Wind Towers from Canada, Indonesia, Korea, and Vietnam, Investigation Nos. 701-TA-627-629 and 731-TA-1458-1461 (Final), Publication 5101, August 2020, ("Publication 5101") pp. I-5-I-7.

[7] 84 FR 20164, May 8, 2019.

with material injury by reason of subsidized imports from Canada, Indonesia, and Vietnam and LTFV imports from Canada, Indonesia, Korea, and Vietnam. On July 6, 2020, Commerce published in the *Federal Register* its notice of determinations that imports of wind towers from Canada, Indonesia, Korea, and Vietnam were being sold at LTFV and were subsidized by the governments of Canada, Indonesia, and Vietnam.[8]

The Commission determined on August 19, 2020 that the domestic industry was materially injured or threatened with material injury by reason of LTFV imports of wind towers from Canada, Indonesia, Korea, and Vietnam and subsidized imports of wind towers from Canada, Indonesia, and Vietnam.[9] On August 26, 2020, Commerce issued its antidumping duty orders on wind towers from Canada, Indonesia, Korea, and Vietnam with a final weighted-average dumping margin of 4.94 percent for Canada; between 8.50 percent and 8.53 percent for Indonesia; 5.41 percent for Korea; and between 63.80 percent and 65.96 percent for Vietnam.[10]

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[8] 85 FR 40239, July 6, 2020; 85 FR 40243, July 6, 2020; 85 FR 40226, July 6, 2020; 85 FR 40231, July 6, 2020; 85 FR 40241, July 6, 2020; 85 FR 40245, July 6, 2020; and 85 FR 40229, July 6, 2020.

[9] 85 FR 52357, August 25, 2020.

[10] 85 FR 52546, August 26, 2020.

Nature and extent of subsidies and sales at LTFV

Subsidies

On March 25, 2021, Commerce published a notice in the *Federal Register* of its preliminary determination of countervailable subsidies for producers and exporters of wind towers from India and Malaysia.[11] On June 9, 2021 Commerce published a notice on the Federal Register of its final determination of countervailable subsides for producers and exporters of wind towers from Malaysia.[12] Tables I-1 and I-2 present Commerce's findings of subsidization of wind towers in India and Malaysia, respectively.

Table I-1
Wind towers: Commerce's preliminary and final subsidy determination with respect to imports from India

Entity	Preliminary countervailable subsidy rate (percent)	Final countervailable subsidy rate (percent)
Vestas Wind Technology India Private Limited	3.74	Pending
Naiks Brass & Iron Works	397.16	Pending
Nordex India Pvt	397.16	Pending
Prommada Hindustan	397.16	Pending
Suzlon Energy	397.16	Pending
Vinayaka Energy Tek	397.16	Pending
Wish Energy Solutions Pvt Ltd	397.16	Pending
Zeeco India Pvt. Ltd	397.16	Pending
All others	3.74	Pending

Source: 86 FR 15897, March 25, 2021.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

Note: Rates for all individually listed entities except Vestas Wind Technology India Private Limited are based on adverse facts available.

[11] 86 FR 15897, March 25, 2021; and 86 FR 15887, March 25, 2021.
[12] 86 FR 30593, June 9, 2021.

Table I-2
Wind towers: Commerce's preliminary and final subsidy determination with respect to imports from Malaysia

Entity	Preliminary countervailable subsidy rate (percent)	Final countervailable subsidy rate (percent)
CS Wind Malaysia Sdn Bhd	6.32	6.42
All others	6.32	6.42

Source: 86 FR 15887, March 25, 2021; and 86 FR 30593, June 9, 2021

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

Sales at LTFV

On April 2, 2021 Commerce published a notice in the Federal Register of its preliminary determination of sales at LTFV with respect to imports from Spain.[13] On May 24, 2021 Commerce published a notice of its preliminary antidumping investigations results regarding India and Malaysia.[14] On June 25, 2021 Commerce published a notice in the Federal Register of its final determination of sales at LTFV with respect to imports from Spain.[15] Tables I-3, I-4, and I-5 present Commerce's dumping margins with respect to imports of wind towers from India, Malaysia, and Spain, respectively.

[13] 86 FR 17354, April 2, 2021.
[14] 86 FR 27829, May 24, 2021; and 86 FR 27828, May 24, 2021.
[15] 86 FR 33656, June 25, 2021.

Table I-3
Wind towers: Commerce's preliminary and final weighted-average LTFV margins with respect to imports from India

Exporter/producer	Preliminary dumping margin (percent)	Cash Deposit Rate (adjusted for subsidy offsets) (percent)	Final dumping margin (percent)
Vestas Wind Technology India Private Limited	54.03	50.65	Pending
Acciona Wind Power India Pvt. Ltd.	54.03	50.65	Pending
Nordex India Pvt	54.03	50.65	Pending
Prommada Hindustan Private Ltd.	54.03	50.65	Pending
Vinayaka Energy Tek	54.03	50.65	Pending
Zeeco India Pvt. Ltd.	54.03	50.65	Pending
All others	54.03	50.65	Pending

Source: 86 FR 27829, May 24, 2021.

Table I-4
Wind towers: Commerce's preliminary and final weighted-average LTFV margins with respect to imports from Malaysia

Exporter/producer	Preliminary dumping margin (percent)	Final dumping margin (percent)
CS Wind Corporation and CS Wind Malaysia Sdn. Bhd.	0.00	Pending

Source: 86 FR 27828, May 24, 2021.

Note: Commerce preliminarily determined that CS Wind has not made sales of wind towers at LTFV. Further, because CS Wind is the only party for which an estimated weighted-average dumping margin has been calculated for this preliminary determination, Commerce preliminarily determined that wind towers from Malaysia have not been sold in the United States at LTFV during the period of investigation. Commerce has not calculated an estimated weighted-average dumping margin for all other producers and exporters because it has not made an affirmative preliminary determination of sales at LTFV.

Table I-5
Wind towers: Commerce's preliminary and final weighted-average LTFV margins with respect to imports from Spain

Exporter/producer	Preliminary dumping margin (percent)	Final dumping margin (percent)
Vestas Eoilca S.A.U.	73.00	73.00
Acciona Windpower S.A.	73.00	73.00
Gamesa Energy Transmission	73.00	73.00
Haizea Wind Group	73.00	73.00
Kuzar Systems S.L.	73.00	73.00
Windar Renovables	73.00	73.00
All others	73.00	73.00

Source: 86 FR 17354, April 2, 2021; and 86 FR 33656, June 25, 2021.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[16]

> *The merchandise covered by this investigation consists of certain wind towers, whether or not tapered, and sections thereof. Certain wind towers support the nacelle and rotor blades in a wind turbine with a minimum rated electrical power generation capacity in excess of 100 kilowatts and with a minimum height of 50 meters measured from the base of the tower to the bottom of the nacelle (i.e., where the top of the tower and nacelle are joined) when fully assembled.*
>
> *A wind tower section consists of, at a minimum, multiple steel plates rolled into cylindrical or conical shapes and welded together (or otherwise attached) to form a steel shell, regardless of coating, end-finish, painting, treatment, or method of manufacture, and with or without flanges, doors, or internal or external components (e.g., flooring/decking, ladders, lifts, electrical buss boxes, electrical cabling, conduit, cable harness for nacelle generator, interior lighting, tool and storage lockers) attached to the wind tower section. Several wind tower sections are normally required to form a completed wind tower.*
>
> *Wind towers and sections thereof are included within the scope whether or not they are joined with non-subject merchandise, such as nacelles or rotor blades, and whether or not they have internal or external components attached to the subject merchandise.*
>
> *Specifically excluded from the scope are nacelles and rotor blades, regardless of whether they are attached to the wind tower. Also excluded are any internal or external components which are not attached to the wind towers or sections thereof, unless those components are shipped with the tower sections.*

[16] 86 FR 30593, June 9, 2021.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations are imported under statistical reporting number 7308.20.0020 and subheading 8502.31.00 of the Harmonized Tariff Schedule of the United States ("HTS"). The 2021 general rate of duty is free for HTS subheading 7308.20.00 (covering towers and lattice mast structures of iron or steel, tubular, whether or not tapered; sections and components thereof) and 2.5 percent ad valorem for HTS subheading 8502.31.00 (covering wind-powered generating sets). Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Section 301 proceedings[17]

Wind towers entering the United States under HTS subheading 7308.20.00, when imported either as a tower or tower sections alone, were included in the Office of the United States Trade Representative's ("USTR's") second enumeration ("Tranche 2") of products originating in China that became subject to the additional 25 percent ad valorem duties (annexes A and C of 83 FR 40823), since August 23, 2018, pursuant to Section 301 of the Trade Act of 1974 ("Trade Act"). See also U.S. notes 20(c) and 20(d) to subchapter III of HTS chapter 99. Wind towers entering the United States under HTS subheading 8502.31.00, when imported as part of a wind-powered electric generating sets (with nacelles and rotor hubs and blades), were included in USTR's first enumeration ("Tranche 1") of products originating in China that became subject to the additional 25 percent ad valorem duties (annexes A and B of 83 FR 28710), since July 6, 2018, pursuant to Section 301 of the Trade Act. See also U.S. notes 20(a) and 20(b), subchapter III of chapter 99. Effective July 1, 2020, no exclusions from these additional duties have been granted for either wind towers or for wind-powered electric generating sets originating in China.

In addition, the raw materials for manufacturing wind towers— certain flat-rolled steel mill products, such as cut-to-length plate, classifiable under the HTS subheadings of chapter 72— were included in the first list to the fourth enumeration ("List 1 to Tranche 4") of the products originating in China that became subject to the additional 10 percent ad valorem duties (Annexes A and B to 84 FR 43304), on or after September 1, 2019, pursuant to Section 301 of the Trade Act, which was subsequently increased to 15 percent while retaining the same effective date. Effective February 14, 2020, the 15 percent duty was reduced to 7.5 percent for

[17] Publication 5101, pp. I-12-I-14.

the products enumerated on List 1 to Tranche 4. See also U.S. notes 20(r), and 20(s) to subchapter III of HTS chapter 99. These duties are in addition to the existing Section 232 duties on steel imports. Effective July 1, 2020, no exclusions from these additional duties have been granted for flat-rolled steel originating in China.

Section 232 proclamations[18]

Products classifiable under HTS heading 7308 are not subject to additional section 232 duties. However, the flat-rolled steel mill products, classifiable under the HTS headings of chapter 72, for manufacturing wind towers were included in the enumeration of iron and steel articles (imported on or after March 23, 2018) that became subject to the additional 25 percent ad valorem Section 232 duties. At this time, imports of flat-rolled steel mill products originating in Australia, Canada, and Mexico are exempt from duties or quota limits; imports of flat-rolled steel mill products originating in Argentina, Brazil, and Korea are exempt from duties but instead are subject to quota limits; and imports of flat-rolled steel mill products originating in all other countries are subject to the 25 percent additional duties. See U.S. notes 16(a), 16(b), and 16(e) in subchapter III of HTS chapter 99. Imported wind towers are not covered by these additional duties.

The product

Description and applications[19]

Wind towers are a component of wind turbines. Wind turbines, whether designed for onshore or offshore electric-power generation,[20] consist of three main components-- the nacelle, rotor, and tower. Wind turbines convert wind into electrical energy. The nacelle contains the wind turbine’s main power-generating components (i.e., the gearbox, low- and high-speed shafts, generator, controller, and brake), while the horizontally mounted rotor typically consists of three blades (of aluminum or composite fiber) attached to the hub.[21] The nacelle is mounted on top of the tower, which is typically of tubular-shaped steel in utility-scale wind turbines (figure I-1).

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[18] Unless otherwise noted, this information is based on Publication 5101, pp. I-15-I-24.

[19] Unless otherwise noted, this information is based on Publication 5101, pp. I-15-I-24.

[20] Domestic producers typically manufacture wind towers for onshore wind turbines.

[21] Petition, p. 9; exh. I-12: Office of Energy Efficiency and Renewable Energy, *The Inside of a Wind Turbine*, pp. 447-448.

Figure I-1
Wind towers: Utility-scale wind turbine

Source: U.S. Department of Energy, National Renewable Energy Laboratory ("DOE/NREL"), credit: Dennis Schroeder.

Wind turbines have capacities ranging from less than 1 kilowatt ("kW") to several megawatts ("MW," equivalent to 1,000 kW). Utility-scale wind turbines are those with a capacity exceeding 100 kW.[22] Utility-scale wind turbine capacities have increased over time. In the United States, a wind turbine's average installed capacity rose from 1.74 MW in 2009 to 2.6 MW in 2019 (figure I-2).

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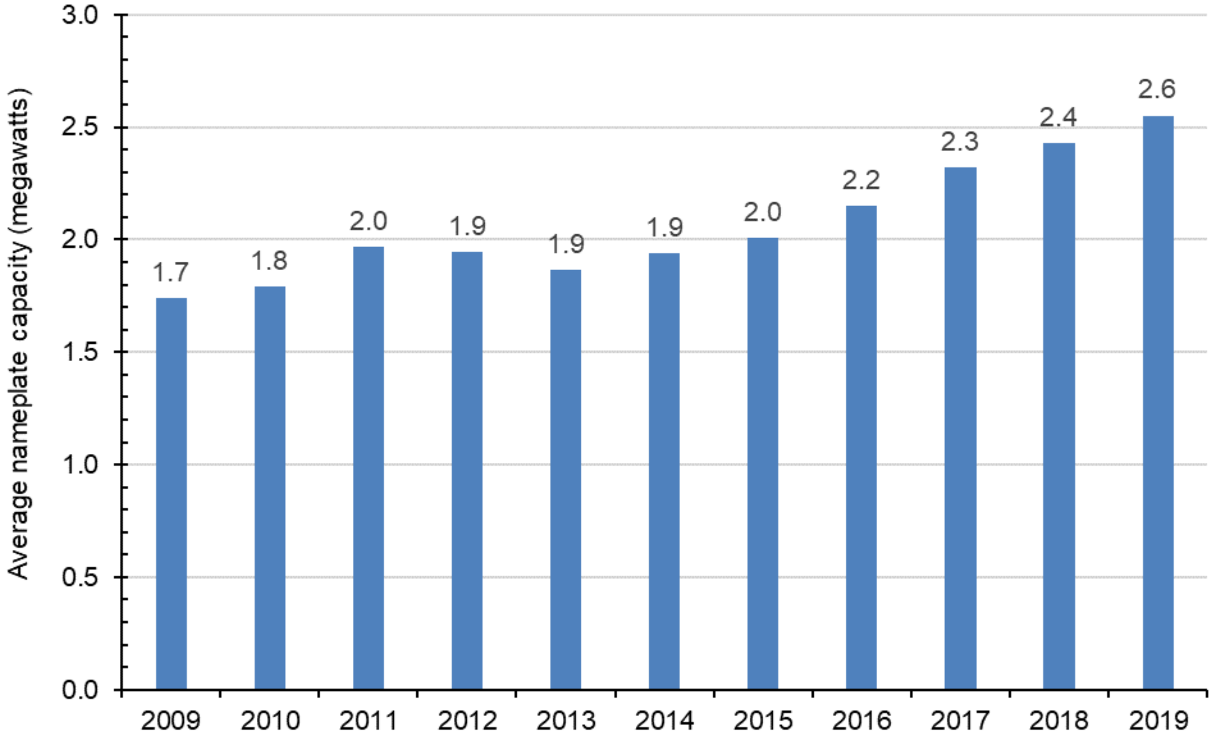
[22] U.S. Department of Energy ("USDOE"), Wind Energy Technologies Office ("WETO"), WINDExchange, "Utility-Scale Wind Energy," no date, https://windexchange.energy.gov/markets/utility-scale, retrieved May 6, 2021.

Figure I-2
Wind towers: Average nameplate capacity of wind turbines installed in the United States, 2009–19



Source: Wiser, Ryan and Mark Bolinger, *2020 Wind Technologies Market Report*, U.S. Department of Energy ("USDOE"), Office of Energy Efficiency and Renewable Energy ("OEERE"), August 2020, data file, https://emp.lbl.gov/wind-technologies-market-report, retrieved May 6, 2021.

Wind turbines can be installed individually or as part of a larger wind project (also referred to as a "wind farm"). Favorable geographic locations for building wind projects include "tops of smooth, rounded hills; open plains and water; and mountain gaps that funnel and intensify wind" and sites "at higher elevations."[23] Installations of wind turbines for electric-power utilities and independent power producers[24] can be a single turbine, but more commonly range from several turbines to more than 100 turbines. Wind projects and wind turbines, including towers, have a life expectancy of at least 20 years.

[23] U.S. Energy Information Administration, Wind Explained: Where Wind Power is Harnessed, March 17, 2021, https://www.eia.gov/energyexplained/wind/where-wind-power-is-harnessed.php, retrieved May 6, 2021.

[24] An independent power producer is an entity that primarily produces electric power for sale on the wholesale market. It is not a utility, does not own electricity-transmission lines, and does not have a designated service area.

Utility-scale wind turbines generally use tubular steel towers that consist of three or more (base, one or more mid, and top) sections.[25] These sections are assembled on a foundation at the wind project site, with the complete tower height generally ranging from 60 meters (197 feet) to more than 100 meters (328 feet), as measured from the base of the tower to the hub ("hub height"). The base of the tower (figure I-3) can be up to 4.5 meters (15 feet) in diameter, but varies with tower size, as smaller towers tend to have a smaller-diameter base. The tower typically is tapered so that the diameter at the top is smaller than the diameter at the base. The weight of a complete tower can range from 100 short tons to more than 300 short tons, depending on the height and steel gauge (thickness).[26] At the base of the tower there is a steel door that allows for entry into the tower, inside of which are the tower's internal mechanical and electrical fittings ("internals") such as platforms, ladders, lighting, lifts (elevators), electrical-cable harnesses, storage lockers, and other accessories.[27] For the typical structures and internals for each tower section, see figure I-4.

[25] Wind towers in the United States commonly consist of between three and five sections. Petition, p. 11.

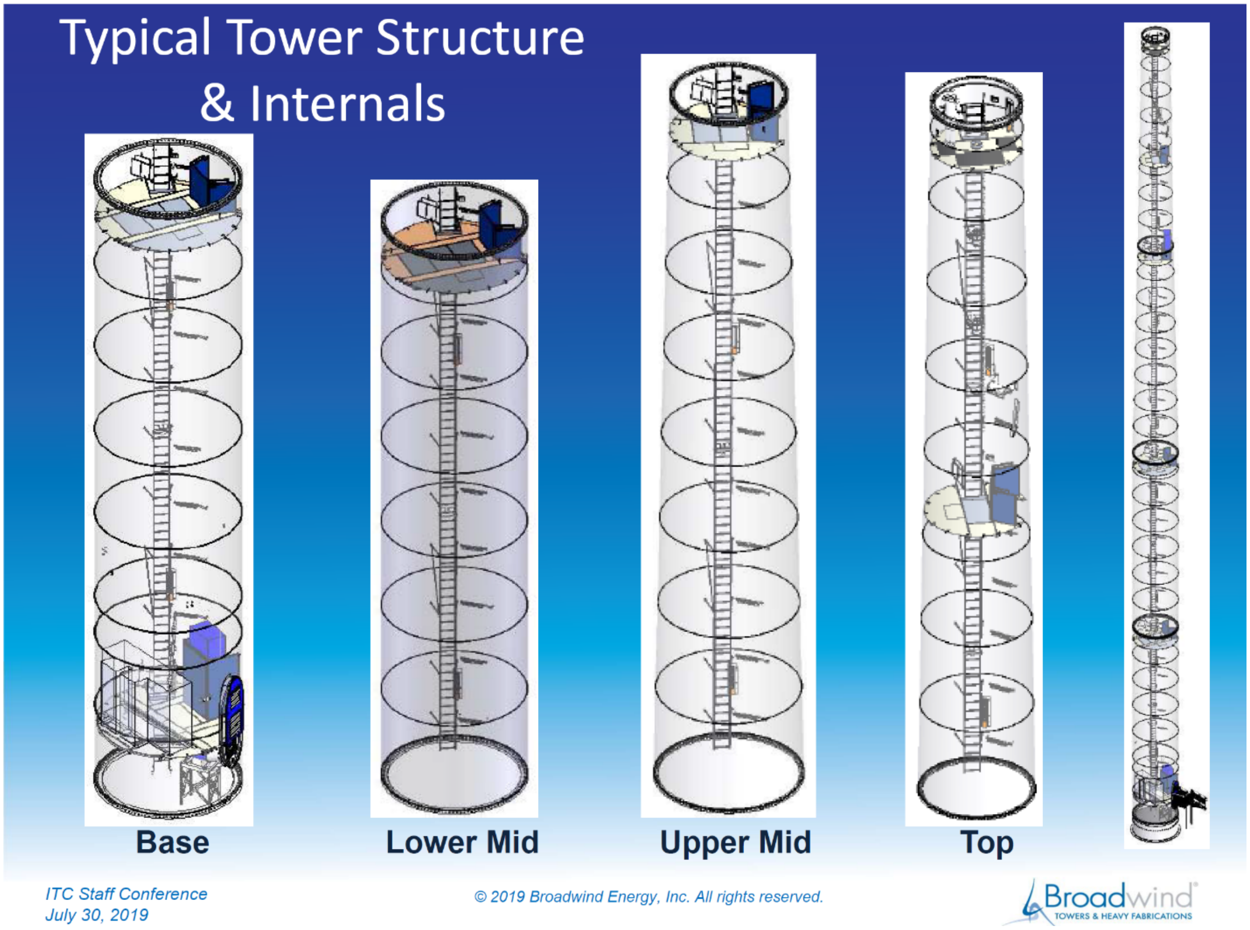
[26] Petition, p. 11.

[27] Petition, p. 14.

Figure I-3
Wind towers: Installed wind turbines

Source: DOE/NREL, credit: Iberdrola Renewables.

Figure I-4
Wind towers: Tower sections and corresponding internals



Source: Utility Scale Wind Towers from Canada, Indonesia, Korea, and Vietnam, Investigation Nos. 701-TA-627-629 and 731-TA-1458-1461 (Final), USITC Publication 5101, August 2020, p. I-19.

The average hub height of wind towers installed in the United States increased from 79 meters (259 feet) in 2009 to 88 meters (289 feet) in 2018.[28] Overall, the share of the market accounted for by towers of less than 80 meters (262 feet) declined, while the share of 90 to 100-meter (295 to 328-foot) towers increased substantially (figure I-5). Taller towers offer advantages by accommodating longer blades[29] that can capture more energy[30] and from the

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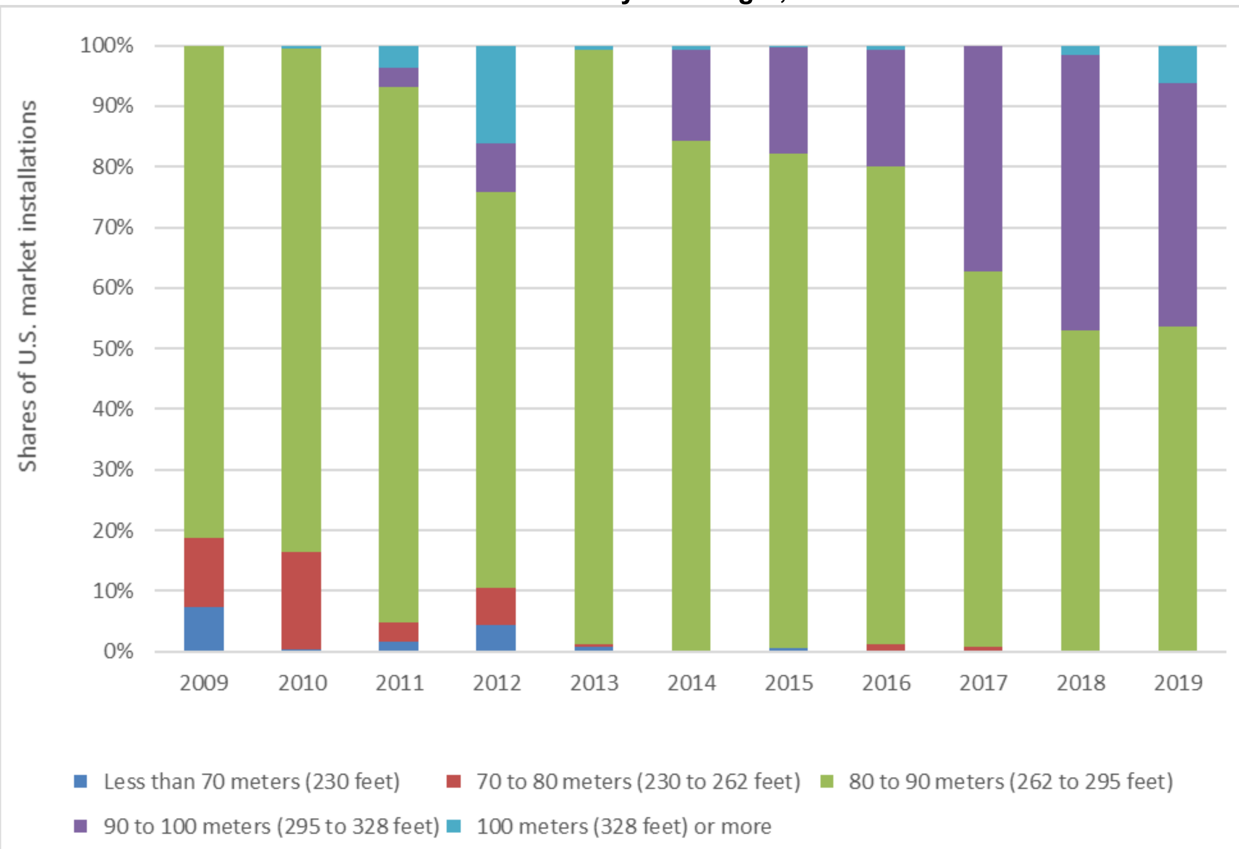
[28] Wiser, Ryan and Mark Bolinger, *2018 Wind Technologies Market Report*, U.S. Department of Energy ("USDOE"), Office of Energy Efficiency and Renewable Energy ("OEERE"), August 2019, p. 24, https://emp.lbl.gov/windtechnologies-market-report, retrieved October 19, 2020.

[29] Depending on the specific model, towers that are 80-meters (262-feet) tall (hub height) can accommodate blades ranging from 38.5 meters (126 feet) to 50.0 meters (164 feet) in length (blade tip to hub center). Industrial Wind Energy Opposition ("AWEO"), "Size Specifications of Common Industrial Wind Turbines," no date, http://www.aweo.org/windmodels.html, retrieved October 19, 2020.

[30] The power captured by a wind turbine is generally proportional to the sweep area of the blades. Conference transcript, p. 71.

higher, more constant wind speeds occurring at higher altitudes.[31] Higher altitudes also often have less turbulence which increases service lifespans and reduces operating and maintenance costs because of the lower system loads on the turbine.[32]

Figure I-5
Wind towers: Share of U.S. market installations by hub height, 2009–19



Source: Wiser, Ryan and Mark Bolinger, *2020 Wind Technologies Market Report*, USDOE, OEERE, August 2020, data file, https://emp.lbl.gov/windtechnologies-market-report, retrieved May 6, 2021.

While tubular steel towers are the most common design for utility-scale wind turbines, other tower technologies are being used or are under development, often as a result of the increasing size of the wind towers and height of wind turbines. These include concrete (constructed on-site from segments either cast in-situ or assembled from precast, reinforced

[31] Petition, p. 10; exh. I-12: Office of Energy Efficiency and Renewable Energy, *The Inside of a Wind Turbine*, p. 62.
[32] Miceli, Francesco, "Wind Turbine Towers – the Bigger the Better," June 1, 2017, http://www.windfarmbop.com/tag/concrete-tower/.

panels),[33] hybrid (with both concrete and steel sections),[34] and space frame (steel lattice towers with five legs covered with an architectural fabric)[35] towers.

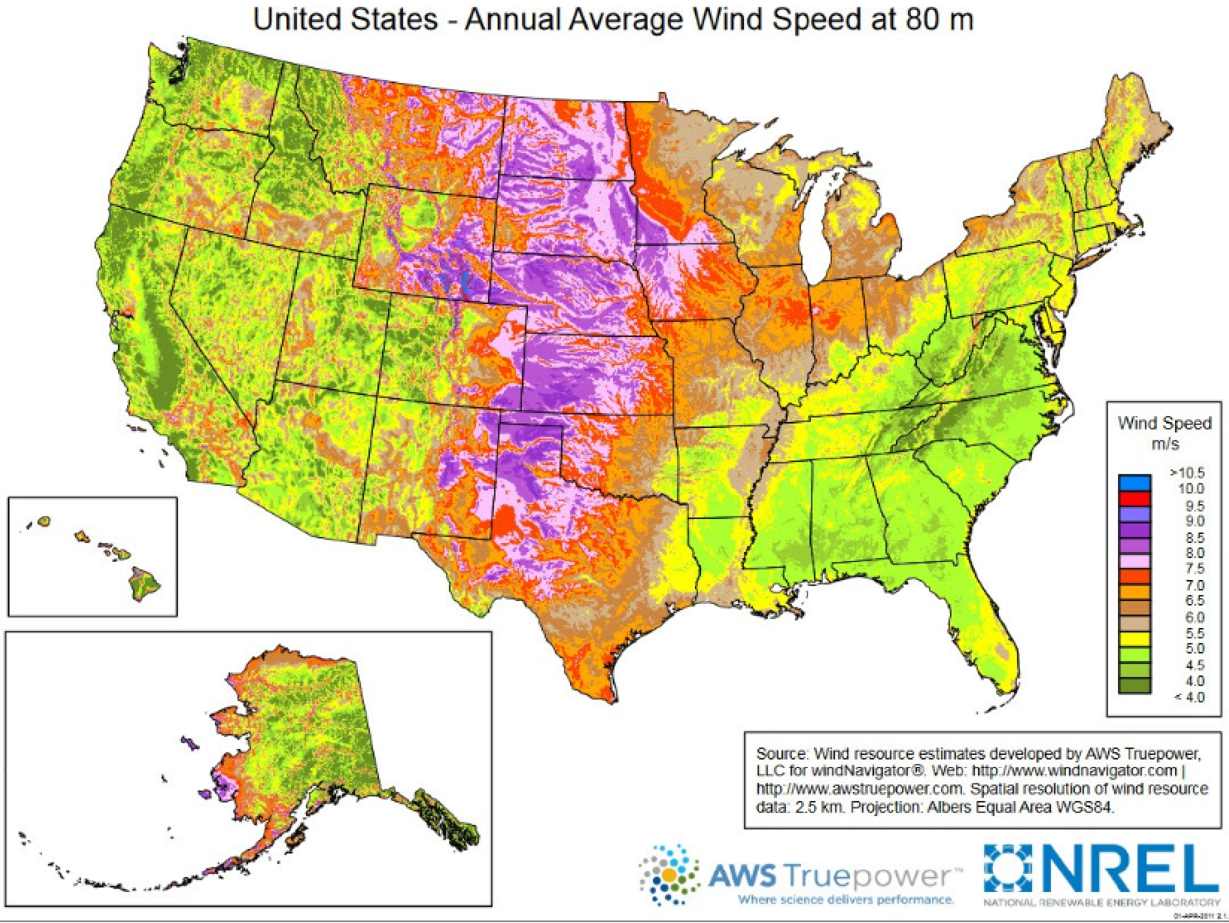
The installed generating capacity of U.S. wind turbines (totaling 122,465 MW in fourth-quarter 2020) is concentrated between the Rocky Mountains and the Mississippi River— the "Wind Corridor"— where average annual wind speeds at an altitude of 80 meters (262 feet) are the fastest across the continental United States (figure I-6). Texas is the leading state, with 33,133 MW of installed capacity, about three times as much as the next two-highest states, Iowa (with 11,660 MW) and Oklahoma (with 9,048 MW) (figure I-7). Of the 41 states with installed wind power generating capacity, 19 have cumulative capacities exceeding 1,000 MW.

[33] Gocha, April, "Taller Concrete Wind Turbine Towers May Finally Get Off the Ground to Expand Wind Power Potential," June 12, 2017, https://ceramics.org/ceramic-tech-today/taller-concrete-wind-turbine-towers-may-finally-get-off-the-ground-to-expand-wind-power-potential; Rycroft, Michael, "Concrete Towers Lift Wind Turbines to New Heights," January 11, 2017, https://www.ee.co.za/article/concrete-towers-lift-wind-turbines-new-heights.html.

[34] Miceli, Francesco, "Wind Turbine Towers – the Bigger the Better," June 1, 2017; "Concrete Towers for Onshore Wind Farms: an Overview," July 7, 2012, http://www.windfarmbop.com/tag/concrete-tower/.

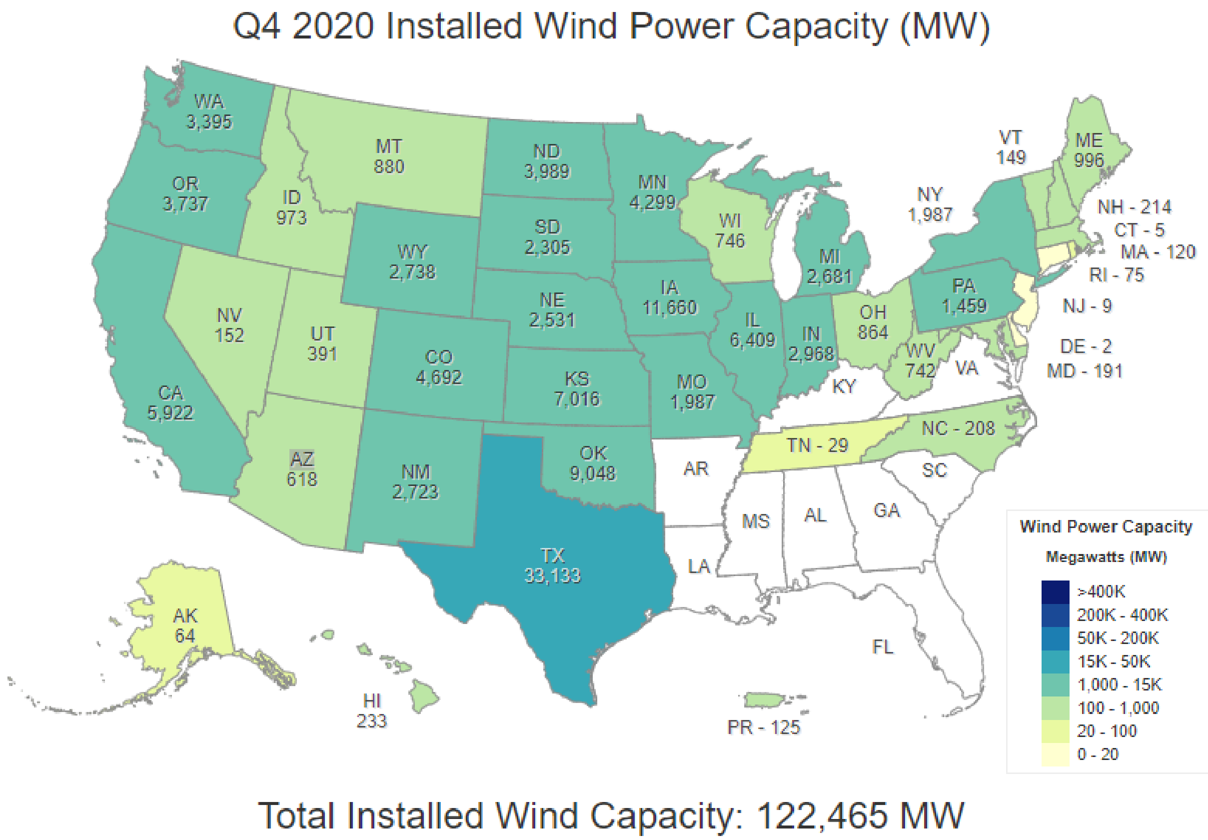
[35] Trabish, Herman K., "Photos: Is GE's Space Frame Tower the Future of Wind Power?," March 7, 2014, https://www.greentechmedia.com/articles/read/is-ges-space-frame-wind-turbine-tower-the-future-of-wind-power.

Figure I-6
Wind towers: Wind speeds across the United States



Source: U.S. Department of Energy ("USDOE"), Wind Energy Technologies Office ("WETO"), WINDExchange, "U.S. Average Annual Wind Speed at 80 Meters," no date, https://windexchange.energy.gov/maps-data/319, retrieved May 6, 2021.

Figure I-7
Wind towers: U.S. installed wind power capacity by state, fourth-quarter 2020



Source: U.S. Department of Energy ("USDOE"), Wind Energy Technologies Office ("WETO"), WINDExchange, "U.S. Installed and Potential Wind Power Capacity and Generation," no date, https://windexchange.energy.gov/maps-data/321, retrieved May 6, 2021.

As of the first half of 2020, only 30 MW of U.S. operating wind power generating capacity was offshore. The Block Island Wind Farm, off the coast of Rhode Island, was the only U.S. operating offshore capacity at the beginning of 2020.[36] [37] Wind-generating projects are being located offshore to take advantage of stronger, more consistent, and more abundant wind currents than those onshore; proximity to major costal population and energy-consuming centers for reduced power-transmission costs; and stronger afternoon and evening offshore wind speeds (rather than stronger night-time onshore wind speeds) that match the timing of rising electric-power consumption and peak utility-load periods.[38] At the end of 2018, 25,824 MW[39] of offshore wind power-generation projects were in various planning stages, site leasing,

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[36] Musial, Walter, Philipp Beiter, Paul Spitsen, Jacob Nunemaker, and Vahan Gevorgian, 2018 *Offshore Wind Technologies Market Report*, USDOE, OEEFE, August 2019, pp. 5, 12, https://www.energy.gov/sites/prod/files/2019/09/f66/2018%20Offshore%20Wind%20Technologies%20Market%20Report.pdf.

[37] A second offshore wind power generating project was completed in July 2020. Dominion Energy Inc. completed the installation of two new 6-MW offshore wind turbines at its Coastal Virginia Offshore Wind ("CVOW") project located on 112,800 acres leased from the U.S. Bureau of Ocean Energy Management, 27 miles off the coast of Virginia Beach, Virginia. On October 14th, 2020, Dominion Energy announced that pilot project was ready to enter commercial service. Dominion Energy plans for more than 220 such turbines capable of generating 2,600 MW of wind power by 2026 at this offshore site, which will be the largest wind project in federal waters. Dominion Energy, "Coastal Virginia Offshore Wind," no date, https://www.dominionenergy.com/company/making-energy/renewable-generation/wind/coastal-virginia-offshore-wind#:~:text=About%20the%20Project,of%20Mines%20Minerals%20and%20Energy.&text=Dominion%20Energy%20will%20partner%20with,Denmark%20on%20the%20two%20turbines, retrieved May 6, 2021; "Dominion Energy Announces Largest Offshore Wind Project in US," news release, September 19, 2019, https://news.dominionenergy.com/2019-09-19-Dominion-Energy-Announces-Largest-Offshore-Wind-Project-in-US; Schneider, Gregory S., "Virginia's First Offshore Wind Turbines Promise Jobs and Clean Power," *Washington Post*, June 30, 2020, https://www.washingtonpost.com/local/virginia-politics/virginia-offshore-wind-turbines/2020/06/30/5e4eb518-bacf-11ea-bdaf-a129f921026f_story.html.; and Dominion Energy, "Dominion Energy's Coastal Virginia Offshore Wind Turbines Complete Final Step To Start Serving Virginia Customers," October 14 2020, https://news.dominionenergy.com/2020-10-14-Dominion-Energys-Coastal-Virginia-Offshore-Wind-Turbines-Complete-Final-Step-To-Start-Serving-Virginia-Customers.

[38] Small, Laura, "Fact Sheet - Offshore Wind: Can the United States Catch up with Europe?," Environmental and Energy Study Institute ("EESI"), January 4, 2016, https://www.eesi.org/papers/view/factsheet-offshore-wind-2016.

[39] Musial, Walter, Philipp Beiter, Paul Spitsen, Jacob Nunemaker, and Vahan Gevorgian, 2018 *Offshore Wind Technologies Market Report*, USDOE, OEEFE, August 2019, pp. 5-6, https://www.energy.gov/sites/prod/files/2019/09/f66/2018%20Offshore%20Wind%20Technologies%20Market%20Report.pdf.

permitting, or electric-power sale offtake agreement negotiations.[40] Project sites are located predominantly off the Atlantic Coast from Maine down to South Carolina, with others located off Ohio's Lake Erie coast, off the Pacific Coast of both northern and central California, and around Hawaii's Oahu Island.[41] Offshore wind turbines tend to be more expensive than onshore turbines.

Manufacturing processes[42]

Wind-turbine OEMS are generally the purchasers of wind towers. Wind towers are produced to each OEM's proprietary specifications to support its nacelle.[43] Typically, each wind-turbine OEM has multiple tower designs for different wind classes and site conditions.[44] The wind-turbine model and characteristics of the wind project site determine which tower design will be used in a particular wind project.

Wind towers are manufactured from heavy gauge, cut-to-length steel plates, which are typically purchased by the tower manufacturer and are typically 3 meters (10 feet) wide, 12 meters (39 feet) long, and 0.5 to 2 or more inches thick. Plate thickness is related to the rotor diameter, weight, position in the tower, and design approach, with some wind turbine using lighter towers. The plate for the tower is the thickest at the base and becomes thinner upward toward the top. The high-strength low-alloy steel plate used in these towers typically meets either European specifications (e.g., S355J2 or S355N) or U.S.-equivalent specifications (e.g., ASTM A709 or A572).[45]

[40] Musial, Walter, Philipp Beiter, Paul Spitsen, Jacob Nunemaker, and Vahan Gevorgian, 2018 *Offshore Wind Technologies Market Report*, USDOE, OEEFE, August 2019, p. 12, https://www.energy.gov/sites/prod/files/2019/09/f66/2018%20Offshore%20Wind%20Technologies%20Market%20Report.pdf.

[41] Musial, Walter, Philipp Beiter, Paul Spitsen, Jacob Nunemaker, and Vahan Gevorgian, 2018 *Offshore Wind Technologies Market Report*, USDOE, OEEFE, August 2019, pp. 9-12, https://www.energy.gov/sites/prod/files/2019/09/f66/2018%20Offshore%20Wind%20Technologies%20Market%20Report.pdf.

[42] Unless otherwise noted, this information is based on Utility Scale Wind Towers from Canada, Indonesia, Korea, and Vietnam, Investigation Nos. 701- TA-627-629 and 731-TA-1458-1461 (Final), USITC Publication 5101, August 2020, pp. I-25-I-33.

[43] Petition, p. 11.

[44] Siemens Gamesa, "Onshore wind turbines," https://www.siemensgamesa.com/en-int/products-and-services/onshore, retrieved May 7, 2021; GE Renewable Energy, "Onshore wind farm technology," https://www.ge.com/renewableenergy/wind-energy/onshore-wind, retrieved May 7, 2021; and Vestas, "Product Portfolio," https://www.vestas.com/en/products, retrieved May 7, 2021.

[45] Petition, p. 11.

Manufacturing of wind towers is a multi-step process that requires a wide variety of large-scale fabrication procedures. Depending on the overall height and design, the tower is generally manufactured and transported in three to five sections for assembly at the wind project site. The major steps are: (1) plate cutting and rolling, (2) can welding, (3) can-to-can welding, (4) flange welding, (5) internal-supports installation, (6) door-frame installation, (7) metallizing and painting, and (8) final internals installation.

Plate cutting and rolling— After the steel plate is checked for quality and cleaned, it is cut with a plasma and/or oxygen acetylene cutter and its edges may be beveled to facilitate welding. The plate is then passed through a roller, which bends it into a cylindrical or conical shape.

Can welding— The longitudinal edges of the rolled plate are welded together on both the inside and outside of the seam to create a "can." A typical tower consists of 30 to 40 such cans (figure I-4). Ultrasonic tests are used to check the quality of welded joints.

Can-to-can welding— The individual cans are then fitted together and then circumferentially welded together to create a tower section. Tower sections vary in length and depend on the tower's height and number and type of section.[46]

Flange welding— A forged steel flange— a high-precision, machined steel ring with a flared rim into which a series of evenly spaced holes are drilled into its circumference— is welded onto the cans at the ends of each tower section, to fasten the sections together flange-to-flange with large structural nuts and bolts.

Internal-supports installation— The brackets, clips, and lugs (to which the internals will be attached) are welded onto the interior surface of the sections as supports for subsequent attaching the internal components. The brackets are generally fabricated from steel bars but can also be purchased as prefabricated brackets of steel angles.

Door-frame installation— A utility/service door is installed at the bottom of the base section by cutting an oval opening with an oxygen-acetylene torch, installing a steel-plate frame to the opening, and attaching the steel-plate door.

Metallizing and painting— Both the inner and outer surfaces of tower sections are prepared by blasting with grit to remove debris and create a rough surface that improves paint adherence. The flanges and other portions of the section surface may be metalized by applying an aluminum-zinc alloy coating using a thermal spraying process to inhibit rust and corrosion. The sections are then painted with one or more layers of epoxy, urethane, or other coating

[46] A taller tower does not necessarily require longer sections as the section lengths for an 80-meter (262-foot) tower consisting of three sections can be longer than a 100-meter (328-foot) tower consisting of five sections. However, a 100-meter (328-foot) tower will be substantially heavier overall.

materials on the interior and two or more layers on the exterior. The painted sections are allowed to dry and cure, which can require several hours, depending on the weather.

Final internals installation— After the mechanical and electrical internals are installed within, the tower sections undergo a final quality-control inspection process.

Post-manufacture, transportation, and assembly

The end of each tower section is covered with a tarp prior to being moved to a temporary storage area ("laydown yard"),[47] usually located directly adjacent to its manufacturing facility, for pick-up by the wind-turbine OEM customer.[48] Transporting the individual tower sections, nacelles, hub, and blades for subsequent assembly at the wind project site is usually arranged by the OEM customer.[49] After the OEM delivers all of the turbine components to the project site, a plant contractor undertakes the engineering, procurement, and construction ("EPC") work that includes assembling the electrical interconnections and erecting and assembling the individual wind turbines. The OEM also tests the connected turbines and may be contracted to perform long-term turbine maintenance.

Transportation is a major issue to the wind power generating industry because the optimal locations for siting wind projects are often remote or complex terrains and wind turbine components are large, heavy, and extremely difficult to transport.[50] [51] Tower sections are usually transported by truck to get towers to remote project sites that other transportation modes cannot reach.[52] Some of the largest tower sections that are too large to be transported

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[47] To organize and manage the temporary storage of wind turbine components for subsequent transfer to the wind project site, laydown-yard requirements include: (1) proximity to both wind farm clusters and to shipping ports, rail spurs, and major highway networks; (2) suitable equipment to off-load and load wind turbine components; (3) ample space for organization and placement of blades and nacelles; and (4) 24-hour security. North American Windpower ("NAW") Staff, "Wave Wind Breaks Ground on Lay-Down Yard," March 13, 2009, https://nawindpower.com/wave-wind-breaks-ground-on-lay-down-yard.

[48] Conference transcript, pp. 77 (Blashford) and 77 (Bourland).

[49] Conference transcript, p. 23 (Bourland) and 132-133 (Jochum).

[50] Mooney, Meghan, and Galen Maclaurin, Transportation of Large Wind Components, National Renewable Energy Laboratory ("NERL"), September 2016, p. 1, https://www.nrel.gov/docs/fy16osti/67014.pdf, retrieved May 7, 2021.

[51] Additional factors that wind-project developers also consider include proximity to large utility transmission lines, environmental and wildlife impacts, land ownership, existing infrastructure, population density, regional land use, and state and local siting ordinances.

[52] Mooney, Meghan, and Galen Maclaurin, Transportation of Large Wind Components, National Renewable Energy Laboratory ("NERL"), September 2016, p. 3, https://www.nrel.gov/docs/fy16osti/67014.pdf, retrieved May 7, 2021.

by rail are transported by truck or by ship (vessel) and barges.[53] Due to their sheer size (and fragility of nacelles and blades), there are highly complicated logistical considerations and hazards for transporting individual tower sections and other components.[54] As the generating capacity of wind turbines grow and the tower heights and base diameters expand, the larger components and greater weights constrain the feasible routes, due to larger turning radius, tall clearance requirements, and road weight restrictions. The larger 2-MW to 3-MW turbines that have become the standard for land-based wind projects are reaching the upper limit for road transit. For tower sections with base diameters exceeding 4 meters (13 feet), road transit can require up to eight oversized loads for a single tower.[55]

At the wind project site, the base section of the tower is lifted by a crane and lowered straight down onto the foundation platform, over a power unit that sits in the base of the tower (figure I-8). The flange at the base of the tower is attached to the foundation platform with large structural nuts and bolts, then the next section of the tower is added and the flanges at each end of the tower sections are bolted together. Once all sections of the tower are assembled, the nacelle is mounted onto the top-section flange. Finally, the rotor (hub and blades) assembly is attached to the generator shaft protruding from the front of the nacelle.

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[53] Due to their massive sizes and weights, it can be more costly to transport tower sections over land than shipping by sea on a per-mile basis. Typically, sea transportation is very efficient and thus less expensive than land transportation.

[54] See e.g.: DeBruler, Dennis, "Transporting Wind Turbine Parts," Industrial History, September 23, 2017, http://industrialscenery.blogspot.com/2017/09/transporting-windmill-parts.html.

[55] Mooney, Meghan, and Galen Maclaurin, Transportation of Large Wind Components, National Renewable Energy Laboratory ("NERL"), September 2016, p. 3, https://www.nrel.gov/docs/fy16osti/67014.pdf, retrieved May 7, 2021.

Figure I-8
Wind towers: Turbine installation on land

Raising the base section, with the foundation platform and power unit in the foreground.

Lowering the base section onto the foundation platform and over the power unit.

Raising and positioning the next tower section over those already in place.

Positioning tower sections for bolting together the flanges.

Raising the nacelle, containing the generator, for mounting onto the top-section flange.

Raising the rotor assembly for mounting onto the generator shaft at the front of the nacelle.

Source: DOE/NREL, credit: First Wind (top), Patrick Corkery (center), and Todd Spink (bottom).

For offshore wind projects, towers are constructed from high-grade steel to withstand the additional hydrodynamic loading from wave action. Offshore wind towers require dedicated corrosion protection systems with high-grade main coatings due to the more difficult offshore operating and maintenance conditions, according to the American Wind Energy

Association ("AWEA").[56] [57] In addition to being more rugged, offshore wind towers are larger, with base diameters varying as much as 5 meters (16 feet) to 10 meters (33 feet), and heavier with a 120 meters- (394 feet-) high tower weighing over 2,500 metric tons (2,756 short tons).[58] Offshore towers are most commonly installed upon a tubular monopile foundation (substructure) set into the seafloor. Tubular monopole wind towers account for 73.5 percent of the total global offshore wind towers in 2018.[59] Tubular monopole offshore wind towers are easier to install in shallow to medium water depths than other base types at the same depth.[60] Other types of offshore tower support substructures include various fixed-bottom and moored floating foundations (figure I-9). The turbine and foundation components are transported by "seajacking" (self-elevating) ships or barges to the project site (figure I-10). After the monopile foundation base is set into the seabed by a shipboard hydraulic pile-driver, the transition piece is lowered and attached onto the top. This transition piece, which includes a boat-mooring fixture, access ladder, and top platform, serves as the mounting platform protruding above the water's surface for attaching the base section of the tower.

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[56] National Academy of Sciences ("NAS"), Structural Integrity of Offshore Wind Turbines: Oversight of Design, Fabrication, and Installation, 2011, pp. 19–20, https://www.nap.edu/catalog/13159/structural-integrity-of-offshore-wind-turbines-oversight-of-design-fabrication; Ng, Chong, and Li Ran, eds., Offshore Wind Farms: Technologies, Design, and Operation, Elsevier Ltd., March 2016, https://www.sciencedirect.com/book/9780081007792/offshore-wind-farms.

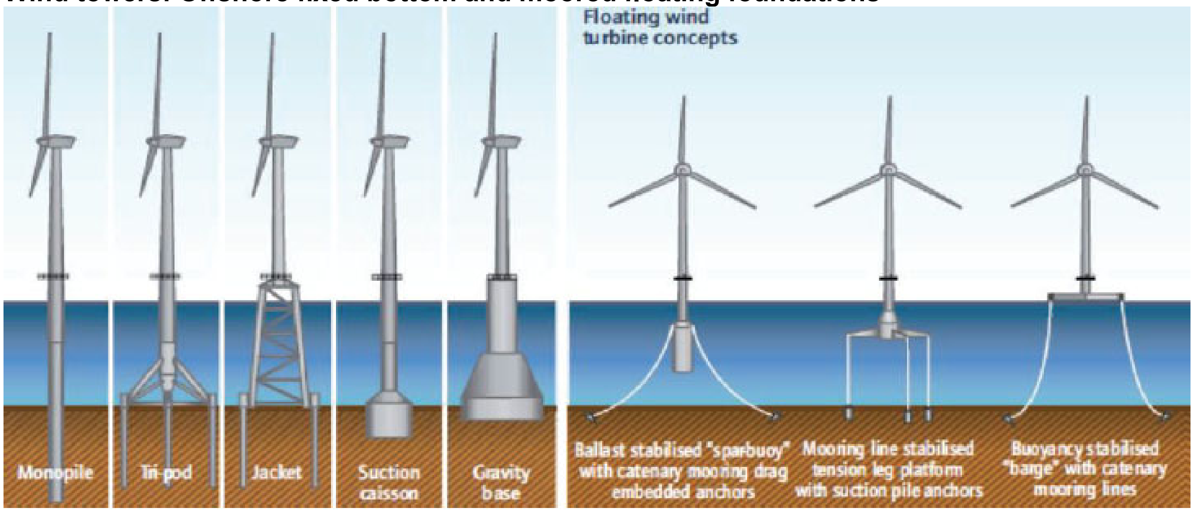
[57] The height of onshore wind towers ranges from 60 meters (197 feet) to 100 meters (328 feet) as measured from the base of the tower to the hub.

[58] Offshore wind towers have thicker plates, higher-strength steel, and higher-strength welding requirements to fabricate wind towers capable of resisting the extreme offshore environmental conditions. Wahlen, Patrick, "Welding Challenges in the Fabrication of Offshore Wind Towers," Lincoln Electric Co., 2010, https://www.lincolnelectric.com/en-us/industries/Documents/Windpower_Eng_Wahlen_Reprint_Oct_2010.pdf.

[59] Musial, Walter, Philipp Beiter, Paul Spitsen, Jacob Nunemaker, and Vahan Gevorgian, *2018 Offshore Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, August 2019, p. 45, https://www.energy.gov/sites/prod/files/2019/09/f66/2018%20Offshore%20Wind%20Technologies%20Market%20Report.pdf.

[60] Woodhatch, Matthew, "Offshore Wind Turbines— How Do You Install a Wind Turbine Out at Sea," Groundsure, April 21, 2017, https://www.groundsure.com/resources/offshore-wind-turbines/.

Figure I-9
Wind towers: Offshore fixed bottom and moored floating foundations

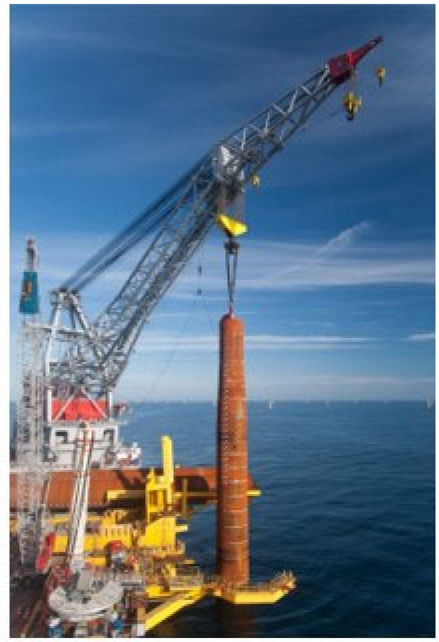


Fixed-bottom foundations Moored floating foundations

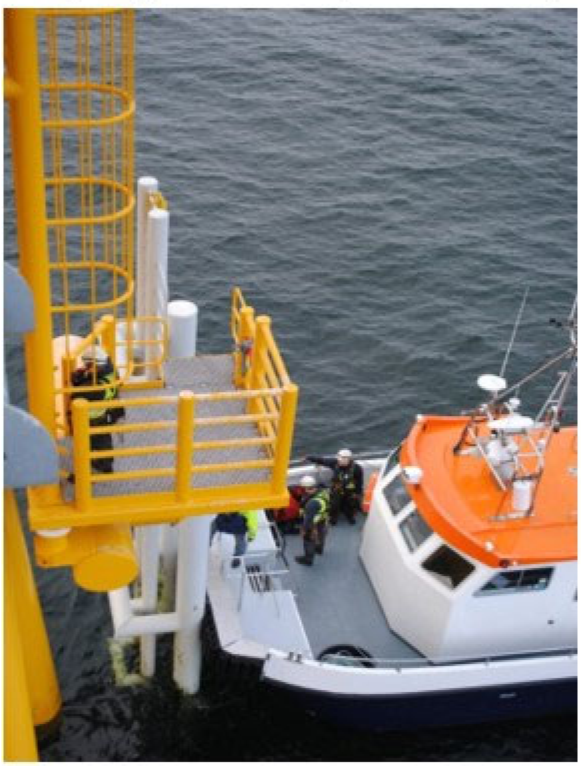
Source: Konstantinidis, E.I., and P.N. Botsaris, "Wind Turbines: Current Status, Obstacles, Trends, and Technologies," *Materials Science and Engineering*, vol. 161, 2016, p. 3, https://iopscience.iop.org/article/10.1088/1757-899X/161/1/012079.

Figure I-10
Wind towers: Turbine installation offshore

Transporting a rotor assembly loaded on a seajacking barge.



Hydraulic driving of the monopile.



Transition piece with mooring fixture and ladders.

Installing the rotor assembly onto the nacelle.

Source: Woodhatch, Matthew, “Offshore Wind Turbines— How Do You Install a Wind Turbine Out at Sea,” Groundsure, April 21, 2017, https://www.groundsure.com/resources/offshore-wind-turbines/.

Domestic like product issues

No issues with respect to domestic like product have been raised in these investigations. The petitioner contends that wind towers constitute a single like product co-extensive with the scope of these investigations.[61] Respondent parties did not address the issue of domestic like product in these preliminary phase investigations. In the preliminary phase of these investigations the Commission defined a single domestic like product consisting of all wind towers, coextensive with the scope of these investigations.[62] In these final phase investigations, no party requested data or other information necessary for arguing for a different definition of the domestic like product.[63] No party commented on the issue of domestic like product in their prehearing or post hearing briefs.

[61] Petitioner's postconference brief, p. 4.

[62] Utility Scale Wind Towers from India, Malaysia, and Spain, Inv. Nos. 701-TA-660-661 and 731-TA-1543-1545 (Preliminary), USITC Publication 5146, December 2020 ("Preliminary phase publication"), p. 7.

[63] Comments on draft questionnaires on behalf of petitioner, January 26, 2021.

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

U.S. market characteristics

Wind towers are a component of utility scale wind turbine electrical power generating units. Wind towers are the steel structures upon which the other major wind turbine components, such as rotor blades and nacelles, are mounted. Wind towers are purchased by wind turbine manufacturers and produced to the wind turbine manufacturer's specifications. These wind turbine manufacturers are sometimes referred to as Original Equipment Manufacturers ("OEMs") and consist of ***. OEMs typically use multiple tower designs depending on the project site and the wind turbine used.[1]

Demand for wind towers is derived from the demand for wind turbines, which is in turn derived from the demand for wind-generated electric power. The growing overall appeal of wind power for environmental and efficiency reasons, as well as Federal tax credit programs, contribute to demand for wind-generated electric power. While U.S. electricity consumption has not increased much overall in the last 10 years, older electricity generation facilities are being closed, thus creating demand for new electric power sources.

Because wind towers are very large and heavy, transportation costs from the production facility to the project site where the wind towers are incorporated into wind turbines are often high. Responding OEMs reported that transportation costs are an important purchasing factor. Petitioners, however, reported that the f.o.b. price is the relevant price of wind towers. According to petitioners, when OEMs enter supply agreements they may not know even in which project a tower will be used, and when the ultimate location of the project is unknown, then delivered cost is also unknown.[2]

Apparent U.S. consumption of wind towers (by number of towers) increased by 37.1 percent between 2018 and 2020.

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[1] Publication 5101, p. II-1.
[2] Petitioners' prehearing brief, pp. 21-33.

U.S. purchasers[3]

Wind turbine manufacturers (OEMs) purchase or produce (***) U.S.-produced wind towers, import wind towers for their own use, and/or sometimes purchase imported wind towers from unrelated importers. Thus, wind tower sourcing decisions often involve whether to purchase wind towers from U.S. producers and/or to import them from foreign producers.

Five OEMs provided responses to the importer/purchaser questionnaire.[4] Four of these firms (***) accounted for nearly all purchases and much of the imports of wind towers in the United States during 2018-20.[5] American Clean Power (ACP)[6] reported that GE installed 53 percent of all turbines installed in 2020, Vestas installed 35 percent, Siemens installed 10 percent, and Nordex installed 3 percent.[7] The fifth purchaser, ***.[8] These OEMs sell wind turbines to a project market (utilities and developers) with many downstream purchasers.

Channels of distribution

U.S. producers and importers of wind towers reported that all of their U.S. shipments during 2018-20 were either sold to end users or were internally consumed.

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[3] Since all U.S. OEM purchasers of wind towers also imported wind towers, importers were issued a combined importer/purchaser questionnaire. OEMs were instructed to answer all applicable questions, whereas firms that were only importers and not OEMs were instructed to skip the purchaser-specific questions. For purposes of Part II, firms' responses to questions applicable to all importers are categorized as importer responses and firm's responses to purchaser-only questions are categorized as purchaser responses. OEMs internally consumed all the wind towers that they imported. Questions addressed to importers were addressed by a maximum of seven firms, while those addressed to purchasers were addressed by a maximum of five firms.

[4] *** were importers but not OEMs. ***. U.S. producers reported either sales to end users or internal consumption.

[5] Based on import data (see Part IV) and customers listed in U.S. producers' questionnaires, all OEMs imported wind towers from at least one country during 2018-20, *** imported from nonsubject sources, *** imported from Spain, and *** imported from Malaysia and India.

[6] ACP is a trade group for wind energy suppliers. It recently changed its name from the American Wind Energy Association.

[7] ACP Market Report Fourth Quarter 2020. This report did not clarify if this is measured in terms of energy production or number of turbines.

[8] ***.

Geographic distribution

Because wind towers are large and difficult to transport and because much of the installation of wind towers tends to be regional (to take advantage of prevailing winds in specific regions), this report separates the U.S. market into nine regions rather than the usual seven. These data were collected by year and by quantity (table II-1). Importer/purchasers were asked to provide these data for both U.S.-produced and imported wind towers since these firms were responsible for the delivery of wind towers and knew where towers were installed.[9] U.S.-produced wind towers were reported to be installed in all regions in the contiguous United States. Over half the installation of U.S. wind towers during 2018-20 were to the Lower Midwest and the Central Southwest.[10] Additionally, over 90 percent of U.S.-produced wind towers shipments were to four regions: the Lower Midwest; the Central Southwest; the Upper Midwest; and Mountains. Imports from India and Malaysia were shipped to the Upper Midwest, Lower Midwest, Central Southwest, and the Pacific Coast.[11] Imports from Spain were reportedly shipped to all regions except the Upper Southeast, and the Lower Southeast. Most subject imports (*** percent) during 2018-20 were shipped to two regions, the Lower Midwest and the Central Southwest. The majority of U.S.-produced wind towers were shipped to these two regions as well. However, during the same period, *** percent of subject imports were shipped to regions other than the top four regions served by the U.S. product.

[9] Purchasers were also able to report geographic markets for more wind towers in every year than producers reported.

[10] States with relatively large sections with average winds 8 meters per second or higher at an altitude of 80 meters include North Dakota, South Dakota, Nebraska, Kansas, Texas, Wyoming, Oklahoma, Iowa, New Mexico, and Minnesota. https://windexchange.energy.gov/maps-data/319.

[11] No imports from India and Malaysia were reported for 2018.

Table II-1
Wind towers: U.S. and imported wind towers shipments reported by the importer/purchasers, number of wind towers, by geographic market area, 2018

Quantity in units

Region	U.S.	India	Malaysia	Spain	Total subject
Northeast.–CT, ME, MA, NH, NJ, NY, PA, RI, and VT.	***	***	***	***	***
Upper Midwest.–MI, MN, NE, ND, SD, and WI.	***	***	***	***	***
Lower Midwest.–IL, IN, IA, KS, OH, and MO.	***	***	***	***	***
Upper Southeast.–DE, DC, MD, VA, and WV.	***	***	***	***	***
Lower Southeast.–AL, FL, GA, KY, MS, NC, SC, and TN.	***	***	***	***	***
Central Southwest.–AR, LA, OK, and TX.	***	***	***	***	***
Mountains.–AZ, CO, ID, MT, NV, NM, UT, and WY.	***	***	***	***	***
Pacific Coast.–CA, OR, and WA.	***	***	***	***	***
Other.–All other markets in the United States not previously listed, including AK, HI, PR, and VI.	***	***	***	***	***
All regions.	***	***	***	***	***

Table continued.

Table II-1 Continued
Wind towers: U.S. and imported wind towers shipments reported by the importer/purchasers, number of wind towers, by geographic market area, 2019

Quantity in units

Region	U.S.	India	Malaysia	Spain	Total subject
Northeast.–CT, ME, MA, NH, NJ, NY, PA, RI, and VT.	***	***	***	***	***
Upper Midwest.–MI, MN, NE, ND, SD, and WI.	***	***	***	***	***
Lower Midwest.–IL, IN, IA, KS, OH, and MO.	***	***	***	***	***
Upper Southeast.–DE, DC, MD, VA, and WV.	***	***	***	***	***
Lower Southeast.–AL, FL, GA, KY, MS, NC, SC, and TN.	***	***	***	***	***
Central Southwest.–AR, LA, OK, and TX.	***	***	***	***	***
Mountains.–AZ, CO, ID, MT, NV, NM, UT, and WY.	***	***	***	***	***
Pacific Coast.–CA, OR, and WA.	***	***	***	***	***
Other.–All other markets in the United States not previously listed, including AK, HI, PR, and VI.	***	***	***	***	***
All regions.	***	***	***	***	***

Table continued on next page.

Table II-1 Continued
Wind towers: U.S. and imported wind towers shipments reported by the importer/purchasers, number of wind towers, by geographic market area, 2020

Quantity in units

Region	U.S.	India	Malaysia	Spain	Total subject
Northeast.–CT, ME, MA, NH, NJ, NY, PA, RI, and VT.	***	***	***	***	***
Upper Midwest.–MI, MN, NE, ND, SD, and WI.	***	***	***	***	***
Lower Midwest.–IL, IN, IA, KS, OH, and MO.	***	***	***	***	***
Upper Southeast.–DE, DC, MD, VA, and WV.	***	***	***	***	***
Lower Southeast.–AL, FL, GA, KY, MS, NC, SC, and TN.	***	***	***	***	***
Central Southwest.–AR, LA, OK, and TX.	***	***	***	***	***
Mountains.–AZ, CO, ID, MT, NV, NM, UT, and WY.	***	***	***	***	***
Pacific Coast.–CA, OR, and WA.	***	***	***	***	***
Other.–All other markets in the United States not previously listed, including AK, HI, PR, and VI.	***	***	***	***	***
All regions.	***	***	***	***	***

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

Note: ***. ***.

Purchasers were asked about the importance of the location of a project in their sales of installations of wind towers. Five OEMs stated that project location was important citing reasons including transportation costs and choice of supplier. Purchasers elaborated that transportation costs could vary based on the transportation method used (e.g., rail, barge, or truck). They added that transporting wind towers longer distances creates timing uncertainty, increases the likelihood of safety problems, and/or increases the likelihood of damage. ***. ***, rail can only be used to deliver wind towers in seven states (Texas, Oklahoma, Kansas, New Mexico, Arizona, Colorado, and Wyoming). *** added that rail transportation cannot be used for wind towers made by U.S. producers in other states. Purchasers also described transportation distance as an important factor in the cost of a project; for example, *** estimated that transportation costs were usually 20 to 30 percent of delivered cost of the tower to the customers' site.[12] *** indicated that it determines its

[12] ***.

tower supplier based on project location (both because of lower delivery cost and greater delivery predictability). *** reported that imports "have a lower total landed cost" than U.S. manufacturers for projects in coastal regions. Additionally, at the conference, the American Wind Energy Association (now ACP) representative stated that for projects on the Gulf of Mexico, West Coast, and East Coast, it is easier to ship wind towers from overseas than by truck from some U.S. production facilities.[13]

Supply and demand considerations

U.S. supply

Table II-2 provides a summary of the supply factors regarding wind towers from U.S. producers and from subject countries. Reported U.S. capacity utilization was generally higher than the capacity utilization reported in subject countries, and U.S. capacity was larger than the capacity reported for each subject country. Inventories tend to be small to nonexistent because wind towers are typically produced-to-order.

[13] Conference transcript, p. 140 (Jochum).

Table II-2
Wind towers: Supply factors that affect the ability to increase shipments to the U.S. market, by country

Quantity in units; ratio and shares in percent; count in number of firms reporting

Factor	Measure	United States	India	Malaysia	Spain
Capacity 2018	Quantity	3,609	***	***	***
Capacity 2020	Quantity	3,682	***	***	***
Capacity utilization 2018	Ratio	74.0	***	***	***
Capacity utilization 2020	Ratio	77.5	***	***	***
Inventory 2018	Ratio	***	***	***	***
Inventory 2020	Ratio	***	***	***	***
Home market 2020	Share	100.0	***	***	***
Non-US export markets 2020	Share	---	***	***	***
Ability to shift production (firms reporting “yes”)	Count	3 of 6	***	***	***

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

Note: Responding U.S. producers accounted for all of U.S. production of wind towers in 2020. For consistency within the report, these data do not include the capacity of ***. Analysis in the text includes a discussion of the impact of ***. Part III provides additional information on the U.S. industry ***. Responding foreign producer/exporter firms accounted for all of U.S. imports of wind towers from India during 2020. Responding foreign producer/exporter firms accounted for all of U.S. imports of wind towers from Malaysia during 2020. Responding foreign producer/exporter firms accounted for more than *** percent U.S. imports of wind towers from Spain during 2020. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Part I, “Summary Data and Data Sources.”

Note: ***. See part IV for more details.

Domestic production

Based on available information, U.S. producers of wind towers have the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of U.S.-produced wind towers to the U.S. market, depending on timing of demand matching timing of available capacity. U.S. producers reported the availability of unused capacity,[14] limited by no export shipments and low inventory levels.

Production increased more than capacity between 2018 and 2020, resulting in a slight increase in capacity utilization. Other products that U.S. producers reportedly can produce on the same equipment as wind towers are ***. Since wind towers are produced-to-order, inventories cannot readily be reallocated to meet new demand. Petitioners reported that supply contracts are designed to ***, increasing factory efficiency. However, these contracts can obligate purchasers to receive wind towers at times when wind towers are not required for installation.[15] Because wind towers are costly and difficult to ship, capacity available in regions that are not near the project location may not be perceived by the purchaser as available capacity; as a result, overall U.S. capacity utilization may be less important for wind towers than it is for products that are easier to transport.

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[14] The analysis in this section is based on data reported in U.S. producers' questionnaires and ***. Questionnaire respondents differed over whether the U.S. industry has sufficient unused capacity to supply U.S. demand or not. Inclusion or exclusion of ***. See "Supply constraints" below. See Part III for more discussion of U.S. producers' capacity. Petitioners claim that ***." Petitioners' postconference brief, responses to staff questions p. 15.

[15] Petitioners' postconference brief, exhibit 25.

Subject imports from India

Based on available information, producers of wind towers from India have the ability to respond to changes in demand with large changes in the quantity of shipments of wind towers to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and an increase in capacity. Factors mitigating responsiveness of supply include *** ability to shift production to or from alternate products.

Between 2018 and 2020, Indian production increased more than capacity, leading to higher capacity utilization. Indian producers reported shipping *** of their wind towers to their home market. ***.[16]

Subject imports from Malaysia

Based on available information, the producer of wind towers from Malaysia has the ability to respond to changes in demand with large changes in the quantity of shipments of wind towers to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and growing capacity. Factors mitigating the responsiveness of supply include ***.

Both Malaysian capacity and production increased between 2018 and 2020; however production increased more, resulting in increased capacity utilization. The Malaysian producer reported ***. The Malaysian producer reported that no other products can be produced on the same equipment as wind towers.

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[16] India is installing utility scale wind turbines. The wind towers for these may be produced in India or imported. The Ministry of New and Renewable Energy (India) *Programme/Scheme wise Physical Progress in 2020-21 & Cumulative upto Feb. 2021* https://mnre.gov.in/the-ministry/physical-progress, and https://en.wikipedia.org/wiki/Wind_power_in_India. Retrieved June 8, 2021.

Subject imports from Spain

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

Between 2018 and 2020, Spanish production of wind towers increased, and capacity decreased, resulting in increased capacity utilization. A very large share of Spanish wind towers is shipped to the home market and exported to non-U.S. markets (mainly the EU). Other products that responding foreign producers in Spain reportedly can produce on the same equipment as wind towers are ***. Factors affecting foreign producers' ability to shift production include lower capacity utilization when other products are produced.

Imports from nonsubject sources

Nonsubject imports accounted for *** percent of total U.S. imports (by value) in 2020. The largest sources of nonsubject imports during 2020 were Canada, Indonesia, and Korea. All three of these countries had antidumping orders put in place on August 26, 2020. Combined, these countries accounted for *** percent of the value of nonsubject imports in 2020.

Supply constraints

Two of six responding U.S. producers (***) and four of seven responding importers reported experiencing constraints in their ability to supply or purchase wind towers since January 1, 2018. The remaining four U.S. producers did not report any supply constraints. *** reported that demand had been greater than its capacity in 2018 and 2019, but not in 2020. ***. It reported that demand exceeded its capacity and ***.

All four large OEMs reported supply constraints in their attempts to purchase wind towers from U.S. producers. ***. ***. ***. ***. Four of the five responding producers[17] and three of the seven responding importers reported that they had not refused, declined or been unable to supply wind towers within the time period requested. U.S. producer ***.[18] All four large OEMs reported delays or declined orders when they attempted to purchase U.S.-produced wind towers. ***. ***. ***. ***."

All U.S. producers and five of the seven responding importers reported no minimum order requirements for wind towers. However, two importers did report experiencing such requirements in their roles as purchasers. ***. ***.

[17] ***.

[18] ***.

Petitioners stated that OEMs sometimes failed to pick up their ordered wind towers in a timely manner, causing storage to fill. Petitioners added that they cannot continue to produce wind towers once their storage is full.[19]

New suppliers

All U.S. producers and three of five responding importers indicated that no new suppliers entered the U.S. market since January 1, 2018. However, two importers cited CS Wind Malaysia, CS Wind Turkey, Haizea-Sica Argentina, and Keystone Tower systems as new suppliers and/or reported increased availability of large towers from Arcosa, Broadwind, and WindarMex.

U.S. demand

Based on available information, the overall demand for wind towers is likely to experience small changes in response to changes in price, mainly because of the limited range of substitute products and the moderate cost share of wind towers in the final cost of wind turbines. Key factors driving demand for wind towers are government incentives for wind energy projects, the cost of wind-based generation of electricity compared to the costs of other methods of generating electricity, and the turnover of electricity generating facilities.

End uses and cost share

Wind towers are used exclusively in wind turbines to support the nacelles and rotor blades.[20] Wind towers are a moderate share of the cost of wind turbines in which they are used. In the 2020 investigation, firms generally estimated that wind towers accounted for *** percent of the cost of wind turbines.[21] Petitioners reported that the tower is a relatively small portion (*** percent) of the total cost of an installed turbine.[22] AWEA's representative (now ACP) reported that the tower makes up approximately 15 percent of the total capital cost of a wind turbine.[23]

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[19] Petitioners' postconference brief, exhibit 25.

[20] Publication 5101, p. II-12.

[21] *Investigation Nos. 701-TA-627-629 and 731-TA-1458-1461 (Final): Utility Scale Wind Towers from Canada, Indonesia, Korea, and Vietnam* — Staff Report INV-SS-081, July 17, 2020, p. II-12.

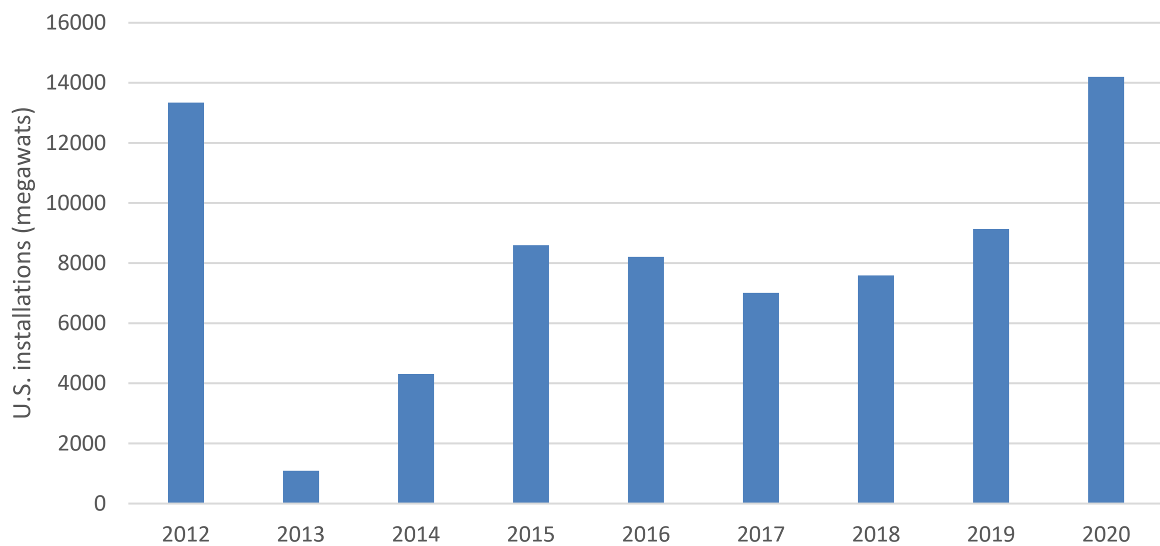
[22] Petitioners' postconference brief, answers to staff questions, p. 7.

[23] Conference transcript, p. 132 (Jochum).

Demand for wind turbines

U.S. utility-scale wind turbine installations increased from 7,589 MW in 2018 to 14,200 MW in 2020, an increase of 6,611 MW (figure II-1).[24] Figure II-1 also shows installations from 2012, to show how the low level of installations in 2013 reflected a push by developers to complete projects in 2012, ahead of the expiration of the production tax credit ("PTC"), which is discussed below. The U.S. Energy Information Administration ("EIA") reported that "the record level of annual capacity additions in 2020 was driven by developers scheduling project completions to qualify for the full-value PTC from 2016. Wind capacity additions tend to be relatively high in years when the PTC is set to expire such as in 2012 and 2020."[25]

Figure II-1
Wind towers: U.S. utility-scale wind turbine installations, 2012-20



Source: AWEA, U.S. Wind Industry First Quarter 2020 Market Report, p. 5, and https://www.awea.org/resources/publications-and-reports/market-reports/2020-u-s-wind-industry-market-reports-(1)/q12020_public, retrieved April 1, 2021.

Note: Underlying data for the figures in Part II are in appendix E.

Vestas stated that "for most if not all the towers installed in 2020, the OEMs likely ordered or secured production capacity well in advanced in 2018-2019."[26]

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[24] Wind turbines are also becoming more efficient; therefore, the number of wind towers required to produce the same amount of power will tend to decline. However, one of the changes that increases wind turbine efficiency is increasing the wind tower height, and taller wind towers tend to cost more.

[25] https://www.eia.gov/todayinenergy/detail.php?id=46576, retrieved March 31, 2021.

[26] Vestas posthearing brief, Response to Commissioner questions, pp. 10-11.

Wind power incentives

Production tax credit

The PTC is a Federal tax credit per kilowatt-hour (kWh) of wind generation for the first 10 years of a wind project.[27] The PTC, a major factor in wind turbine installations, has been renewed six times since the end of 2012 (table II-3). The value of the tax credit may change from year to year.[28] Most of these renewals occurred after a lapse between the end of the previous PTC and the PTC renewal. In 2013, there was a two day lapse before the PTC was extended. In 2014, 2015, and 2019 there were 11 month lapses before the PTC was extended. There was, however, no lapse for 2020 and 2021. After each of these lapses, the PTC has been retroactively extended. In December 2019 and 2020, the PTC was extended through the end of 2020 and 2021. Projects were eligible for the PTC as long as they started construction prior to the deadline and were completed within 5 years.[29] Additionally, in May 2020, due to the COVID-19 pandemic, these incentives were extended (given "safe harbor") to allow projects an additional year to begin construction in order to qualify.[30] The 2020 PTC will apply to projects completed through 2024.[31]

The changing PTC rate may cause year to year changes in the number of wind turbines planned and installed. As described above, the PTC was set at 100 percent for projects begun in 2016, 80 percent for 2017, 60 percent for 2018, 40 percent for 2019, and then increased back to 60 percent for 2020 and 2021. The high PTC rate in 2016 provided an incentive to begin projects in 2016 and provides an incentive to complete these projects in 2020 (and 2021 because of the IRS ruling allowing this to be extended because of COVID-19).

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[27] Publication 5101, p. II-14.

[28] Publication 5101, p. II-14.

[29] Publication 5101, pp. II-14-II-15. In 2020, the IRS extended the time to complete wind projects begun in 2016, allowing these projects to be completed in 2021 because of potential construction disruptions caused by COVID-19. Projects begun in 2016 had a PTC of 100 percent, the following year the PTC fell to 80 percent.

[30] Publication 5101, p. II-15.

[31] Vestas' postconference brief, p. 2.

Table II-3
Wind towers: Recent history of the production tax credit (PTC)

Legislation	Date enacted	Start of PTC window	End of PTC window	Notes
The American Recovery and Reinvestment Act of 2009	2/17/2009	1/1/2010	12/31/2012	
American Taxpayer Relief Act of 2012	1/2/2013	1/1/2013	Start construction by 12/31/2013	
Tax Increase Prevention Act of 2014	12/19/2014	1/1/2014	Start construction by 12/31/2014	
Consolidated Appropriations Act of 2016	12/18/2015	1/1/2015	Start construction by 12/31/2016	100% PTC value
Consolidated Appropriations Act of 2016	12/18/2015	1/1/2015	Start construction by 12/31/2017	80% PTC value
Consolidated Appropriations Act of 2016	12/18/2015	1/1/2015	Start construction by 12/31/2018	60% PTC value
Consolidated Appropriations Act of 2016	12/18/2015	1/1/2015	Start construction by 12/31/2019	40% PTC value
Further Consolidated Appropriations Act of 2020	12/20/2019	1/1/2018	Start construction by 12/31/2020	40% PTC value for 2019 projects; 60% PTC value for 2020 projects
IRS guidance May 2020			Construction begun in 2016 or 2017 were given five years rather than four to come online.	This was to address construction related delays caused by COVID-19
The Taxpayer Certainty and Disaster Tax Relief Act of 2020	12/21/2020	1/1/2021	Start construction by 12/31/2021	60% PTC value

Source: Publication 5101, p. II-15 and https://www.eia.gov/todayinenergy/detail.php?id=46576#:~:text=Under%20the%20new%20PTC%20legislation,of%20the%20full%20credit%20amount, retrieved 3/31/2021 and https://www.gtlaw.com/en/insights/2020/12/taxpayer-certainty-disaster-tax-relief-act-2020-extensions-alternative-energy-tax-credits#:~:text=The%20bill%20includes%20the%20Taxpayer,on%20the%20brink%20of%20expiring, retrieved May 3, 2021.

Investment tax credit and accelerated depreciation

Wind projects were also made eligible for the investment tax credit ("ITC", a tax credit equal to 30 percent of a project's cost) in 2009, and each renewal of the PTC also included a renewal of wind's eligibility for the ITC. The ITC incentive levels for wind projects scaled down at the same rate as the PTC after 2016 and was 18 percent for wind projects begun between December 2019 and January 1, 2021.[32]

[32] Publication 5101, p. II-15.

Additionally, the wind industry benefits from accelerated depreciation. Under the Modified Accelerated Cost-Recovery System ("MACRS"), wind projects are classified as five-year property, which allows depreciation over a shorter time period. The Economic Stimulus Act of 2008 made wind projects eligible for 50 percent depreciation in the first year (known as bonus depreciation). Bonus depreciation for wind was subsequently renewed several times, with first year depreciation ranging from 50 to 100 percent. According to current rules, wind projects completed by the end of 2017 were eligible for 50 percent first year bonus depreciation, while projects completed in 2018 are eligible for 40 percent and projects completed in 2019 are eligible for 30 percent.[33] The December 2019 renewal of the PTC also allows MACRS to continue to apply to wind projects.[34]

Expectation of PTC expiration on demand

The PTC was set to expire at the end of 2020; however, in December 2020 the PTC was extended through 2021 at 60 percent, the same level as in 2020. Nonetheless, investment in wind power projects are long-term investments, and there was some expectation that the PTC might be allowed to expire. Thus firms' behavior in 2020 could have been affected by this expectation up until the PTC was renewed.

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[33] Publication 5101, pp. II-15-II-16.
[34] Publication 5101, p. II-16.

Firms' were asked if the expected expiration of the PTC at the end of 2020 had an effect on demand. Most responding U.S. producers (4 of 6) reported decreased demand because of the expected PTC expiration, although one of these firms (***) reported that it expected strong demand for clean energy through 2024 (table II-4). One U.S. producer (***) expected demand would increase because of the PTC expiration. Another U.S. producer (***) expected demand would be unchanged. Importer responses were even more varied with two expecting demand increases, two expecting demand decreases, and two expecting demand fluctuations. Firms reporting that the PTC expiration increased demand typically reported that this was because purchasers were purchasing more wind towers for installation through the end of 2021 in order to take advantage of the higher rate of the PTC for projects begun in 2016. Two firms reported that if the PTC expires, demand will be lower, although one of these firms expected "strong" demand through 2024.

Table II-4
Wind towers: Count of U.S. producers' responses regarding the impact of the anticipated expiration of the PTC

Item	Increase	No change	Decrease	Fluctuate
Production of wind towers by your firm	1	2	2	0
Financial performance of your firm	1	2	2	1
Demand for wind towers in the U.S. market	1	1	4	0
Prices for wind towers in the U.S. market	0	2	2	2
Timing for U.S. wind energy projects in the development pipeline	1	2	0	3

Table continued.

Table II-4 Continued
Wind towers: Count of importer/purchasers' responses regarding the impact of the anticipated expiration of the PTC

Item	Increase	No change	Decrease	Fluctuate
Production/acquisition of wind towers by your firm	3	1	2	1
Financial performance of your firm	1	2	1	3
Demand for wind towers in the U.S. market	2	1	2	2
Prices for wind towers in the U.S. market	1	1	1	4
Timing for U.S. wind energy projects in the development pipeline	1	3	1	1

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

Expected impact of PTC expiration on financial performance

U.S. producers and importers indicated a wide variety of expected impacts from PTC expiration on financial performance. One U.S. producer (***) reported that the anticipated expiration of the PTC would improve its financial performance (by increasing the volume of wind towers purchased). Two U.S. producers reported that the expiration will decrease their financial performance. *** both reported that in spite of strong demand, the conversion price was depressed, and they had lost sales. Two producers reported that the anticipated expiration of the PTC would have no impact on profitability, reporting ***.

Three importers reported that financial performance would fluctuate, with one of these importers (***) explaining that it does business in all North America. The one importer (***) reporting that the expiration of the PTC would benefit it financially reported the expiration would increase demand.

State incentives

There are also various state incentives for wind power installations, including renewable portfolio standards ("RPS"), which require utilities to source a certain share of energy from renewable sources by a specified date. There were mandatory renewable portfolio standards in 30 states, the District of Columbia, Puerto Rico, and the Virgin Islands in April 2020. In addition, some states have non-binding goals.[35]

Wind-generated electricity demand

Overall demand for electric power is one driver of the demand for wind-generated electricity. U.S. electricity generation typically reflects U.S. demand for electric power.[36] U.S. electricity generation has been generally stable over the past decade, between 4.0 and 4.2 billion megawatt-hours per year (figure II-2).

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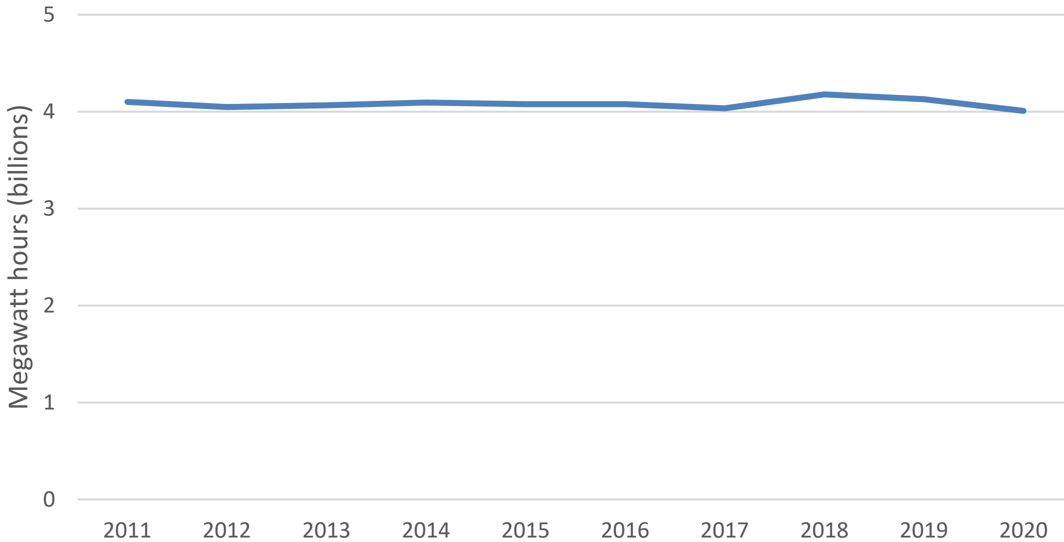
[35] Conference transcript, p. 139 (Jochum).

[36] If electricity generation is less than demand there tend to be shortages (blackouts, brown outs, or similar problems). These shortages are relatively uncommon in the United States. If electricity generation is greater than demand, then producers will want to reduce production in facilities that burn fuel to reduce costs. Thus, in the United States, the quantity supplied tends to reflect the amount demanded at the market prices.

Figure II-2
U.S. electric power generation, utility scale facilities total annual amount, 2011-20



Source: U.S Energy Information Administration, "Net Generation by Energy Source", https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_1_01, retrieved April 1, 2021.

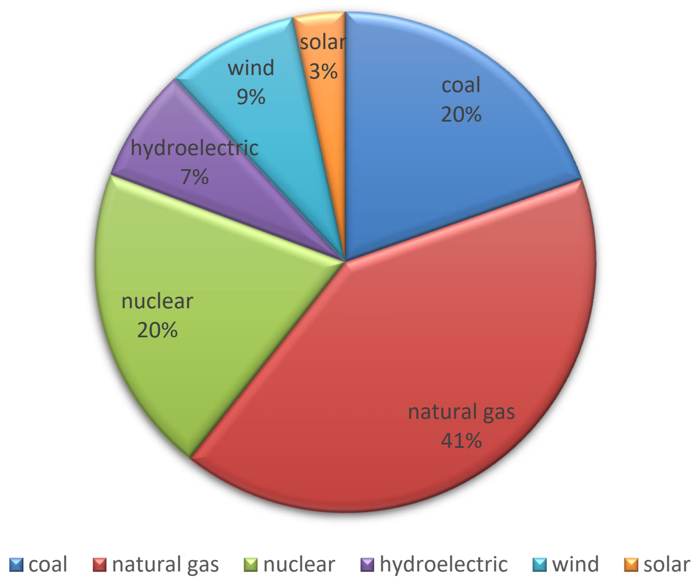
Note: Underlying data for the figures in Part II are in appendix E.

Electricity demand in the United States is supplied primarily by conventional sources,[37] with coal and natural gas accounting for almost two-thirds of all U.S. electricity generated in 2020 (figure II-3). About half the remaining power comes from nuclear generation. Wind energy accounted for 9 percent of total electricity generated in 2020. Although currently a small portion of the electrical grid, the share of electricity generated from renewable energy sources, such as wind, has been steadily increasing. Wind accounted for 48 percent and solar accounted for 36 percent of all new electric generating capacity installed in the United States in 2020 (figure II-4). Between 2018 and 2020, the share of all new electric generating capacity installed in the United States using solar power and wind power increased while the share using natural gas has declined each year. Some states are requiring increased use of renewable electricity sources. For these applications, wind generated electricity mainly competes with solar generated electricity.

[37] Publication 5101, p. II-18.

The electricity infrastructure in the United States is not designed to transfer large amounts of power between different sections of the United States. As a result, demand is mainly regional. The efficiency of wind and solar power production in each specific region will be important in the choice between solar and wind power.[38]

Figure II-3
Net U.S. electricity generation, by sector, 2020

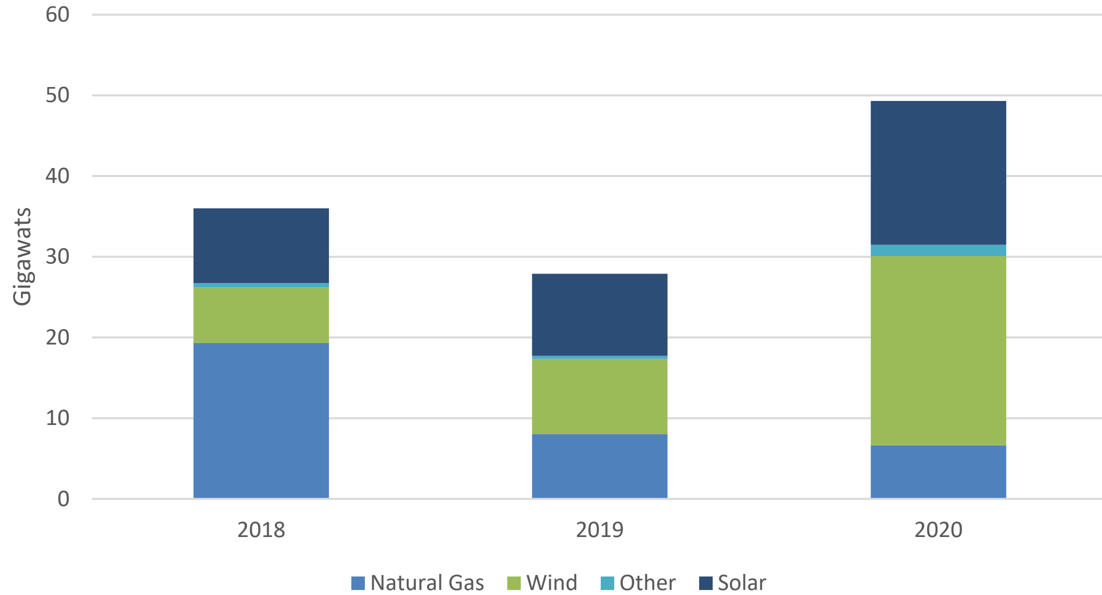


Source: U.S. Energy Information Administration, https://www.eia.gov/electricity/data/browser/, retrieved April 1, 2021.

Note: Underlying data for the figures in this Part II are in appendix E.

[38] How Energy Is Delivered To Consumers, U.S. Energy Information Administration, https://www.eia.gov/energyexplained/electricity/delivery-to-consumers.php, retrieved October 28, 2020.

Figure II-4
Annual new U.S. electrical generating capacity by source type, 2018-20



Source: U.S Energy Information Administration, Annual Energy Outlook 2021, https://www.eia.gov/outlooks/aeo/electricity/sub-topic-02.php, retrieved March 2, 2021.

Note: Underlying data for the figures in Part II are in appendix E.

Levelized cost of energy

Another factor affecting wind energy demand is the cost of competing sources of energy. One measure of the competitiveness of energy sources is the levelized cost of energy ("LCOE").[39] Electricity producers will want to use sources with lower LCOEs. EIA estimates of the average LCOE for new plants entering service in 2023 and for 2026 are shown in tables II-5 and II-6.[40] When tax credits were included, new onshore wind installations had a lower estimated LCOE ($36.6/MWh) than other sources including geothermal, solar, and natural gas for 2023.[41]

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[39] LCOE represents the per-kilowatt hour cost of building and operating a generated plant over an assumed financial life and duty cycle. Publication 5101, p. II-20.

[40] Since these data reflect the new plants being installed, the list of plant types differs between years.

[41] Publication 5101, pp. II-20.

Table II-5
Estimated U.S. capacity-weighted average Levelized Cost Of Energy (LCOE) for plants entering service in 2023

Unit values in 2018 dollars cost per megawatt hour

Item	Total system LCOE	Levelized tax credit	Total system LCOE including tax credits
Wind, onshore	42.8	-6.1	36.6
Geothermal	39.4	-2.5	36.9
Solar PV	48.8	-11.1	37.6
Hydroelectric	39.1	0	39.1
Natural gas-fired Advanced	40.2	0	40.2
Natural gas-fired conventional combined cycle	42.8	0	42.8
Natural gas-fired advanced combustion turbine	77.5	0	77.5
Biomass	92.1	0	92.1
Wind, offshore	117.9	-11.5	106.5

Source: Publication 5101, table II-5, based on EIA data.

Note.--EIA notes that "Technologies for which capacity additions are not expected do not have a capacity-weighted average." The list of technologies are provided by the EIA and change between years.

Table II-6
Estimated U.S. capacity-weighted average Levelized Cost Of Energy (LCOE) for plants entering service in 2026

Unit values in 2020 dollars cost per megawatt hour

	Total system LCOE	Levelized tax credit	Total system LCOE including tax credits
Solar standalone	31.30	-2.26	29.04
Wind, onshore	31.45	0	31.45
Geothermal	36.02	-1.86	34.16
Natural gas-fired conventional combined cycle	34.51	0	34.51
Solar hybrid	45.96	-2.96	43.00
Wind, offshore	115.04	0	115.04
Battery	121.84	0	121.84
Natural gas-fired advanced combustion turbine	199.01	0	199.01

Source: https://www.eia.gov/outlooks/aeo/pdf/electricity_generation.pdf, retrieved March 2, 2021.

The EIA predicted that the cost of a number of types of power will decline between 2023 and 2026. The EIA predicts that both onshore wind power and standalone solar power will cost less per megawatt hour than the least expensive type of gas powered facilities, even before the tax credits were considered, by 2026. The EIA predicted that standalone solar power would be the least expensive source in 2026, costing slightly less per megawatt hour than onshore wind power. The EIA also predicted there would be no tax credit for new onshore or offshore wind installations in 2026. In contrast, while the tax credit for solar power was predicted to decrease, some tax credit was still predicted to be available. Thus, whereas new wind power facilities had been predicted to be the least expensive source of electricity in 2023 (after taxes), standalone solar electricity has been predicted to be the least expensive power source in 2026 (particularly after taxes). However, the efficiency of both solar and wind generation depend on the local environment, and their profitability will also depend on the specific location and needs.[42]

[42] The most efficient locations for solar energy in the United States are in the Southwest, particularly parts of Arizona, California, New Mexico, Nevada, Texas, and Utah. https://www.nrel.gov/gis/assets/images/solar-annual-ghi-2018-usa-scale-01.jpg, retrieved April 14, 2021. Solar power is available only during day light and wind power is available only when winds are adequate.

Prices for wind-generated electricity declined steadily from 2010 to 2017. Average capacity-weighted power purchase agreement[43] ("PPA") prices declined from $39/MWh for those signed in 2012 to $17/MWh for those signed in 2017 (table II-7). Since 2017, PPA prices have increased. This appears to reflect the small number of projects brought online in 2018 and 2019, increasing the price variation, and the fact that, in 2019, no projects in the Central region were brought online, and the Central region has the lowest PPA prices.[44] According to the U.S. Department of Energy, these record-low levels are attributable to declining costs, improved performance, historically low interest rates, and natural gas prices.[45] Government incentives also play a role in reducing the cost of wind power by providing incentives that increase the amount of wind energy produced. Since 2010, natural gas electric power prices have fluctuated while declining overall (table II-8). Natural gas electric power prices have continued declining in 2020 and were $2.48 per thousand cubic feet in 2020.[46]

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[43] AWEA (now ACP) reports that ***. AWEA's postconference brief, Appendix B. *Wind Powers America Third Quarter 2020 Marketing Report,* p. 21.

[44] In 2017, 24 projects were sampled, 20 of these were located in the Central region (with a PPA price of $16 per MWh), 4 were located in the Western region (PPA price $26 per MWh), and one was located in the Eastern region (PPA price $39 per MWh). In 2018, three projects were sampled, one of these was located in the Central region. In 2019, 2 projects were sampled, neither was located in the Central region. *Wind Energy Technology Data Update 2020 Edition*, Lawrence Berkeley National Laboratory, August 2020, tab. 49.

[45] Publication 5101, pp. II-20.

[46] U.S. Energy Information Administration, Natural Gas Electric Power Price, https://www.eia.gov/dnav/ng/hist/n3045us3M.htm, accessed March 13, 2021.

Table II-7
Nationwide power purchase agreement ("PPA") prices for wind-generated electricity, by date of PPA signing and period

PPA execution year	Nationwide average $/MWh
2010	64.30
2011	46.53
2012	30.77
2013	29.01
2014	26.10
2015	30.59
2016	26.37
2017	17.66
2018	18.57
2019	31.86

Source: *Wind Technologies Market Report, 2018*. Data File, exhibit 54. And for 2019 https://emp.lbl.gov/sites/default/files/2018_wtmr_data_file.xlsx. Note these values differ from those reported in Publication 5101, table II-6.

Note:--These data are released in August of the following year, therefore, data are not available for 2020.

Table II-8
Natural gas: U.S. natural gas electric power price, by period

Year	Dollars per thousand cubic feet
2010	5.27
2011	4.89
2012	3.54
2013	4.49
2014	5.19
2015	3.38
2016	2.99
2017	3.51
2018	3.68
2019	2.99
2020	2.48

Source: *U.S. Energy Information Administration,* https://www.eia.gov/dnav/ng/hist/n3045us3M.htm, accessed March 13, 2021.

Business cycles

Five of six responding U.S. producers and five of seven responding importers indicated that the wind tower market was subject to business cycles or other distinctive conditions of competition. Firms reported that such conditions include U.S. renewable energy policy (PTC; state RPS requirements, investment tax credits, and the off and on again PTC cycles), the retirement of coal fired power plants, the cost of natural gas, increasing alignment of orders with specific projects, and the anticipation of more installations in the second half of the year.

All five responding U.S. producers and five of seven responding importers indicated that there had been changes to the business cycle for wind towers since January 1, 2018. Firms generally described the PTC as important because it had been extended for one year by the IRS, thus evening out demand between 2020 and 2021. They also indicated that because the PTC was extended throughout both 2020 and 2021 without any lapse, project completions can be more evenly distributed over the next five years. In contrast, when there is a lapse in the PTC, as in most of 2019, demand tends to be more uneven. Other factors cited included seasonal variations in demand, the increasing competitiveness of solar power, and low natural gas prices.

Demand trends

Most U.S. producers (4 of 6) and importers (4 of 7) described U.S. demand for wind towers as having increased since January 1, 2018 (table II-9). Increased demand was attributed to the PTC/tax incentives and the falling cost of wind energy relative to other types of energy.

Most importers described demand outside the United States as increasing. Most U.S. producers reported demand outside the United States is fluctuating. Reasons cited for the trends in demand outside the United States included the lower cost of renewable energy, increasing awareness of “green” energy/government strategies to reduce carbon emissions, and offshore wind developments.

Table II-9
Wind towers: Count of firms’ responses regarding overall domestic and foreign demand

Market	Firm type	Increase	No change	Decrease	Fluctuate
Domestic demand	U.S. producers	4	1	0	1
Domestic demand	Importer/purchasers	4	0	1	2
Foreign demand	U.S. producers	2	0	0	3
Foreign demand	Importer/purchasers	5	1	1	1

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

Note: ***.

Substitute products

Direct substitutes for wind towers are very limited, as wind towers are required for utility scale wind turbines. In the longer run, substitutes for wind energy more broadly may include use of alternative energy sources, but choices between energy sources have many criteria. In addition, the decisions of the type of power source to use are typically made years before the project is completed.

Substitutability issues

The degree of substitution between domestic and imported wind towers depends upon such factors as relative prices (e.g., price discounts/rebates), quality (e.g., grade standards, defect rates, etc.), and conditions of sale (e.g., lead times between order and delivery dates, reliability of supply, product services, etc.). Based on available data, staff believes that there is a moderate-to-high degree of substitutability between domestically produced wind towers and wind towers imported from India, Malaysia, and Spain. In general, wind towers produced to the same specifications by an OEM-qualified manufacturer are interchangeable to the wind turbine OEM.[47] Purchasers often described factors other than price, including transportation costs and availability, as important in their purchasing decisions. The main factors reducing substitutability between U.S. and imported wind towers from subject countries are transportation costs and timing of deliveries. This may work in favor of either U.S. produced or imported wind towers depending on the locations of the projects and the available capacity at the U.S. facilities close to the project.

Lead times

All responding U.S. producers and importer/purchasers reported that all their commercial shipments or purchases were produced-to-order. U.S. producers reported lead times between 120 to 155 days, while importer/purchasers reported lead times between 140 to 210 days for U.S.-produced wind towers and lead times of 168 to 270 for imported wind towers.

Knowledge of country sources

Four purchasers indicated they had marketing/pricing knowledge of domestic product, two of Indian product, three of Malaysian product, three of Spanish product, and five of the product from nonsubject countries.

As shown in table II-10, all responding purchasers reported that they and their customers sometimes or never make purchasing decisions based on the producer. All responding purchasers reported that they and their customers never make purchasing decisions based on country of origin.

[47] Conference transcript, p. 6 (Price).

Table II-10
Wind towers: Count of purchasing decisions by purchaser or their customer, based on producer and country of origin

Firm making decision	Decision based on	Always	Usually	Sometimes	Never
Purchaser	Producer	0	0	3	2
Customer	Producer	0	0	2	2
Purchaser	Country	0	0	0	5
Customer	Country	0	0	0	4

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

Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for wind towers were availability (including available capacity when needed, delivery schedule, and lead time) (5 firms), price/cost (including total delivered cost) (5 firms), and quality (including meeting specifications) (3 firms), as shown in table II-11. Availability was the most frequently cited first-most important factor (cited by 2 firms), followed by price, quality, and qualification (1 firm each); availability was the most frequently reported second-most important factor (3 firms); and price and quality were the most frequently reported third-most important factors (2 firms each). Purchasers described quality as the ability to meet purchasers' specifications.

Table II-11
Wind towers: Count of ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third	Total
Availability	2	3	0	5
Price	1	2	2	5
Quality	1	0	2	3
Qualification	1	0	0	1
Location	0	0	1	1

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

The majority of purchasers (3 of 5) reported that they sometimes purchase the lowest-priced product. The other two purchasers *** reported usually purchasing the lowest priced product.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 20 factors in their purchasing decisions (table II-12). The factors rated as very important by more than half of responding purchasers were availability, delivery time, quality meets industry standards, and reliability of supply (5 purchasers each); delivery terms and product consistency (4 each); and price and U.S. transportation costs (3 each).

Table II-12
Wind towers: Count of importance of purchase factors, as reported by U.S. purchasers, by factor

Factor	Very important	Somewhat important	Not important
Availability	5	0	0
Able to purchase using contracts	1	2	2
Able to spot purchases	2	2	1
Delivery terms	4	1	0
Delivery time	5	0	0
Discounts offered	1	2	2
Distance from U.S. source to project location	2	2	1
Immediate availability of capacity	2	3	0
Minimum quantity requirements	1	1	3
Mode of transportation offered (e.g., rail, truck, vessel)	0	1	4
Packaging	0	1	4
Payment terms	2	3	0
Price	3	2	0
Product consistency	4	1	0
Product range	0	3	2
Quality meets industry standards	5	0	0
Quality exceeds industry standards	2	2	1
Reliability of supply	5	0	0
Technical support/service	2	2	1
U.S. transportation costs	3	1	1

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

Factors which most responding purchasers reported were not important included mode of transportation offered and packaging (4 purchasers each) and minimum quantity requirement (3). In addition, more purchasers reported being able to purchase using contracts, discounts offered, and product range as not important factors than listed these as very important factors.

Supplier certification

Four of five responding purchasers require their suppliers to become certified or qualified to sell wind towers to their firm. ***. Purchasers reported that the time to qualify a new supplier ranged from 90 to 365 days. ***.

*** described its qualification processes as including multiple stages with multiple onsite visits. *** reported using an advanced product planning process modeled on the auto industry. It reported that this process was used by a number of OEMs including ***. After the decision to place a purchase order, ***.[48]

Two of four responding purchasers reported that domestic suppliers had failed in their attempts to qualify wind towers or had lost their approved status since 2018. ***. ***.

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since 2018 (table II-13). One firm (***) reported that its domestic purchases had increased because it had increased its use of larger towers which were less costly to supply domestically. Three purchasers reported that their purchases of U.S.-produced wind towers had fluctuated. *** explained that U.S. capacity was insufficient to meet *** needs in 2019 and 2020. Two purchasers reported changes in purchases from a subject country: *** reported it had increased its purchases from Malaysia because it was not able to get U.S.-produced wind towers and *** reported fluctuating purchases from Spain, but did not explain why.

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[48] ***.

Table II-13
Wind towers: Count of changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Decreased	Increased	Constant	Fluctuated	Did not purchase
United States	0	1	0	3	1
India	0	0	0	0	5
Malaysia	0	1	0	0	4
Spain	0	0	0	1	4
Nonsubject sources	0	0	1	3	1

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

Three of five responding purchasers reported that they had changed suppliers since January 1, 2018. ***.

Importance of purchasing domestic product

All four responding importer/purchasers reported that over 90 percent of their purchases did not require purchasing U.S.-produced product. No firm reported that domestic product was required by law nor was required by their customers, and one firm (***) reported other preferences for domestic product for *** percent of its sales. It elaborated that for projects based in Michigan, it preferred a supplier based in that state.

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing wind towers produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 20 factors for which they were asked to rate the importance. One firm each compared domestic wind towers to those from India and Spain and reported that they were comparable for all 20 factors. Three firms compared wind towers produced in the United States with those produced in Malaysia (table II-14).[49] Most of these firms reported that U.S. and Malaysian wind towers were comparable for 19 of the 20 factors. For distance from the U.S. source to project location, one purchaser reported that domestic wind towers were superior and one reported that U.S. and Malaysian wind towers were comparable.

Three importers compared U.S. and nonsubject wind towers and most reported that they were comparable for all factors (table II-15). Two firms compared Malaysian wind towers with wind towers from nonsubject countries and reported that they were comparable for all factors other than U.S. transportation costs (table II-16). One firm reported Malaysia was superior, and one reported Malaysia was comparable to nonsubject wind towers for U.S transportation costs. One firm compared Indian and Spanish wind towers with those from nonsubject countries and reported that they were comparable for all factors except that Indian wind towers were superior to nonsubject for U.S. transportation costs.

[49] One firm (***) compared wind towers from each the subject countries with that from the other subject countries. It reported the wind towers were comparable for all factors that it provided a response. (It did not compare India and Malaysia on discounts offered).

Table II-14
Wind towers: Count of purchasers' responses comparing U.S.-produced and imported product

Factor	Comparison Country	Superior	Comparable	Inferior
Availability	U.S. vs Malaysia	0	2	1
Able to purchase using contracts	U.S. vs Malaysia	0	3	0
Able to spot purchases	U.S. vs Malaysia	0	2	1
Delivery terms	U.S. vs Malaysia	0	3	0
Delivery time	U.S. vs Malaysia	0	2	1
Discounts offered	U.S. vs Malaysia	0	2	0
Distance from U.S. source to project location	U.S. vs Malaysia	1	1	0
Immediate availability of capacity	U.S. vs Malaysia	0	2	1
Minimum quantity requirements	U.S. vs Malaysia	0	3	0
Mode of transportation offered (e.g., rail, truck, vessel)	U.S. vs Malaysia	0	3	0
Packaging	U.S. vs Malaysia	0	3	0
Payment terms	U.S. vs Malaysia	0	2	1
Price	U.S. vs Malaysia	0	2	1
Product consistency	U.S. vs Malaysia	0	3	0
Product range	U.S. vs Malaysia	0	2	1
Quality meets industry standards	U.S. vs Malaysia	0	3	0
Quality exceeds industry standards	U.S. vs Malaysia	0	3	0
Reliability of supply	U.S. vs Malaysia	0	3	0
Technical support/service	U.S. vs Malaysia	0	3	0
U.S. transportation costs	U.S. vs Malaysia	0	3	0

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

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

Note: Data are only shown for country comparisons with at least two purchaser responses There was only one comparison of wind towers from India and Spain to U.S. produced wind towers. These are discussed in the text above.

Table II-15
Wind towers: Count of purchasers’ responses comparing U.S.-produced and imported product

Factor	Comparison Country	Superior	Comparable	Inferior
Availability	U.S. vs Nonsubject	0	2	1
Able to purchase using contracts	U.S. vs Nonsubject	0	3	0
Able to spot purchases	U.S. vs Nonsubject	0	2	1
Delivery terms	U.S. vs Nonsubject	0	3	0
Delivery time	U.S. vs Nonsubject	0	3	0
Discounts offered	U.S. vs Nonsubject	0	2	0
Distance from U.S. source to project location	U.S. vs Nonsubject	1	2	0
Immediate availability of capacity	U.S. vs Nonsubject	0	2	1
Minimum quantity requirements	U.S. vs Nonsubject	0	3	0
Mode of transportation offered (e.g., rail, truck, vessel)	U.S. vs Nonsubject	0	2	0
Packaging	U.S. vs Nonsubject	0	3	0
Payment terms	U.S. vs Nonsubject	0	2	1
Price	U.S. vs Nonsubject	0	2	1
Product consistency	U.S. vs Nonsubject	0	3	0
Product range	U.S. vs Nonsubject	0	2	1
Quality meets industry standards	U.S. vs Nonsubject	0	3	0
Quality exceeds industry standards	U.S. vs Nonsubject	0	3	0
Reliability of supply	U.S. vs Nonsubject	0	3	0
Technical support/service	U.S. vs Nonsubject	0	3	0
U.S. transportation costs	U.S. vs Nonsubject	1	2	0

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

Note: A rating of superior means that price/U.S. transportation cost is generally lower. For example, if a firm reported “U.S. superior,” it meant that the U.S. product was generally priced lower than the imported product.

Note: Data are only shown for country comparisons with at least two purchaser responses.

Table II-16
Wind towers: Count of purchasers' responses comparing imported from nonsubject countries with those from subject countries

Factor	Comparison Country	Superior	Comparable	Inferior
Availability	Malaysia vs Nonsubject	0	1	0
Able to purchase using contracts	Malaysia vs Nonsubject	0	2	0
Able to spot purchases	Malaysia vs Nonsubject	0	2	0
Delivery terms	Malaysia vs Nonsubject	0	2	0
Delivery time	Malaysia vs Nonsubject	0	2	0
Discounts offered	Malaysia vs Nonsubject	0	1	0
Distance from U.S. source to project location	Malaysia vs Nonsubject	0	2	0
Immediate availability of capacity	Malaysia vs Nonsubject	0	1	0
Minimum quantity requirements	Malaysia vs Nonsubject	0	1	0
Mode of transportation offered (e.g., rail, truck, vessel)	Malaysia vs Nonsubject	0	2	0
Packaging	Malaysia vs Nonsubject	0	2	0
Payment terms	Malaysia vs Nonsubject	0	1	0
Price	Malaysia vs Nonsubject	0	2	0
Product consistency	Malaysia vs Nonsubject	0	2	0
Product range	Malaysia vs Nonsubject	0	2	0
Quality meets industry standards	Malaysia vs Nonsubject	0	2	0
Quality exceeds industry standards	Malaysia vs Nonsubject	0	2	0
Reliability of supply	Malaysia vs Nonsubject	0	2	0
Technical support/service	Malaysia vs Nonsubject	0	2	0
U.S. transportation costs	Malaysia vs Nonsubject	1	1	0

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

Note: A rating of superior means that price/U.S. transportation cost is generally lower. For example, if a firm reported "Malaysia superior," it meant that the Malaysia product was generally priced lower than the nonsubject product.

Note: Data are only shown for country comparisons with at least two purchaser responses.

Comparison of U.S.-produced and imported wind towers

In order to determine whether U.S.-produced wind towers can generally be used in the same applications as imports from India, Malaysia, and Spain, U.S. producers and importers/purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in tables II-17 and II-18, most U.S. producers and importers/purchasers reported that product from all country pairs were always interchangeable. Factors reported to limit interchangeability included lack of qualification for some suppliers for some types of towers, quality issues with wind towers from some U.S. producers, and differences in transportation costs.

Table II-17
Wind towers: Count of U.S. producers reporting the interchangeability between wind towers produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. India	4	2	0	0
U.S. vs. Malaysia	4	2	0	0
U.S. vs. Spain	4	2	0	0
U.S. vs. Other	4	2	0	0
India vs. Malaysia	4	2	0	0
India vs. Spain	4	2	0	0
Malaysia vs. Spain	4	2	0	0
India vs. Other	4	2	0	0
Malaysia vs. Other	4	2	0	0
Spain vs. Other	4	2	0	0

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

Table II-18
Wind towers: Count of importer/purchasers reporting the interchangeability between wind towers produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. India	3	0	1	0
U.S. vs. Malaysia	3	0	2	0
U.S. vs. Spain	3	0	1	0
U.S. vs. other	3	0	2	0
India vs. Malaysia	3	0	1	0
India vs. Spain	3	0	1	0
Malaysia vs. Spain	3	0	1	0
India vs. Other	3	0	1	0
Malaysia vs. Other	3	0	2	0
Spain vs. Other	3	0	1	0

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

As can be seen from table II-19, two of five responding purchasers reported that domestically produced product always met minimum quality specifications, two reported that domestically produced product usually met minimum quality specifications, and one (***) reported that it did not know. One responding purchaser reported that Indian wind towers usually met minimum quality specifications. Three responding purchasers reported that Malaysian wind towers always or usually met minimum quality specifications. Two responding purchasers reported that Spanish wind towers always or usually met minimum quality specifications.

Table II-19
Wind towers: Count of firms' responses regarding suppliers' ability to meet minimum quality specifications, by source

Source of purchases/imports	Always	Usually	Sometimes	Rarely or never	Don't Know
United States	2	2	0	0	1
India	0	1	0	0	2
Malaysia	2	1	0	0	1
Spain	1	1	0	0	2
Nonsubject sources	3	1	0	0	0

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

Note: Purchasers were asked how often domestically produced or imported wind towers meets minimum quality specifications for their own or their customers' uses.

In addition, U.S. producers and importers/purchasers were asked to assess how often differences other than price were significant in sales of wind towers from the United States, subject, or nonsubject countries. As seen in tables II-20 and II-21, most producers reported that there were never significant differences other than price for all country pairs. Two or more importers reported that there were sometimes or frequently significant differences other than price between U.S. wind towers and wind towers imported from Malaysia and nonsubject countries and between wind towers imported from Malaysia and those imported from nonsubject countries. Two importers (***) reported that there were always significant differences other than price, but did not provide an explanation. Importers reporting that there were frequently or sometimes differences other that price (not listed above in the interchangeability section) stated that U.S. producers do not provide good quality technical support, imports have superior on-time delivery performance, and differences in quality and reliability are important non-price factors.

Table II-20
Wind towers: Count of U.S. producers reporting the significance of differences other than price between wind towers produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. India	1	0	1	3
U.S. vs. Malaysia	1	0	1	3
U.S. vs. Spain	1	0	1	3
U.S. vs. other	1	0	1	3
India vs. Malaysia	1	0	1	3
India vs. Spain	1	0	1	3
Malaysia vs. Spain	1	0	1	3
India vs. Other	1	0	1	3
Malaysia vs. Other	1	0	1	3
Spain vs. Other	1	0	1	3

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

Table II-21
Wind towers: Count of importer/purchasers reporting the significance of differences between wind towers produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. India	2	0	1	0
U.S. vs. Malaysia	2	0	3	0
U.S. vs. Spain	2	0	1	0
U.S. vs. other	2	1	2	0
India vs. Malaysia	2	0	1	0
India vs. Spain	2	0	1	0
Malaysia vs. Spain	2	0	1	0
India vs. Other	2	0	1	0
Malaysia vs. Other	2	0	2	0
Spain vs. Other	2	0	1	0

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

Elasticity estimates

This section discusses elasticity estimates; parties were encouraged to comment on these estimates. No comments were received in the prehearing briefs or posthearing briefs.

U.S. supply elasticity

The domestic supply elasticity for wind towers measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of wind towers. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced wind towers. Analysis of these factors above indicates that the U.S. industry has the ability to somewhat increase or decrease shipments to the U.S. market; an estimate in the range of 2 to 5 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for wind towers measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of wind towers. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the wind towers in the production of any downstream products. Based on the available information, the aggregate demand for wind towers is likely to be very inelastic; a range of -0.2 to -0.6 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[50] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced wind towers and imported wind towers is likely to be in the range of 3 to 5.

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

Part III: 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 were presented in *Part I* of this report and information on the volume and pricing of imports of the subject merchandise is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire responses of six firms that accounted for all known U.S. production of wind towers during 2020.

U.S. producers

The Commission issued a U.S. producer questionnaire to six firms based on information contained in the petitions. All six firms provided usable data on their operations. Staff believes that these responses represent all known U.S. production of wind towers.

Table III-1 lists U.S. producers of wind towers, their production locations, positions on the petition, and shares of total production.

Table III-1
Wind towers: U.S. producers of wind towers, their positions on the petition, production locations, and shares of reported production, 2020

Firm	Position on petition	Production location(s)	Share of production (percent)
Arcosa	Petitioner	Clinton, IL Newton, IA Tulsa, OK West Fargo, ND	***
Broadwind	Petitioner	Abilene, TX Manitowoc, WI	***
GRI Towers	***	Amarillo, TX	***
Marmen	***	Brandon, SD	***
Ventower	***	Monroe, MI	***
Vestas	***	Pueblo, CO	***

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

Note: ***. *** U.S. producer questionnaire response, section I-4.

Table III-2 presents information on U.S. producers' ownership, related and/or affiliated firms. *** U.S. producers are owned by another firm, three U.S. producers are related to foreign producers of wind towers and one U.S. producer is related to a U.S importer of wind towers. No U.S. producer reported purchases of U.S. produced wind towers.

Table III-2
Wind towers: 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 III-3 presents U.S. producers' reported changes in operations since January 1, 2018. U.S. producers were asked to indicate whether their firm had experienced any plant openings, relocations, expansions, acquisitions, consolidations, closures, or prolonged shutdowns because of strikes or equipment failure; curtailment of production because of shortages of materials or other reasons, including revision of labor agreements; or any other change in the character of their operations or organization related to the production of wind towers since January 1, 2018. All reported responses are shown in table III-3.

In addition, on ***.[1] Additionally, in June 2021 it was reported that Vestas sold its wind tower facility in Pueblo, Colorado to CS Wind.[2]

[1] ***. Emails from ***, May 6, 2021; and May 26, 2021.

[2] Vestas sells wind turbine tower factory, Energy Live News, June 7, 2021.

Table III-3
Wind towers: U.S. producers' reported changes in operations, since January 1, 2018

Item	Firm name and accompanying narrative response
Expansions	***
Expansions	***
Consolidations	***
Consolidations	***
Prolonged shutdowns or curtailments	***
Prolonged shutdowns or curtailments	***

Table continued on next page.

Table III-3 Continued
Wind towers: U.S. producers' reported changes in operations, since January 1, 2018

Item	Firm name and accompanying narrative response
Prolonged shutdowns or curtailments	***
Prolonged shutdowns or curtailments	***
Revised labor agreements	***
Other	***
Other	***
Other	***
Other	***
Other	***

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

Note: ***. Emails from ***, May 6, 2021; and May 26, 2021.

U.S. production, capacity, and capacity utilization

Table III-4 and figure III-1 present U.S. producers' production, capacity, and capacity utilization.[3] During 2018-20, U.S. producers' production capacity increased by 2.0 percent. During the period for which data were collected, ***.[4]

U.S. producers' production increased by 8.3 percent from 2018 to 2019 then decreased by 1.4 percent from 2019 to 2020. Overall, during 2018-20, U.S. producers' production increased by 6.8 percent, with all but *** reporting higher production in 2020 than in 2018. Except *** whose production increased in each year during 2018-20, U.S. producers' production fluctuated over the period for which data were collect; all but *** had higher production in 2019 than in 2018; and four of six firms had lower production in 2020 than in 2019.[5]

U.S. producers' capacity utilization increased by 4.5 percentage points from 2018 to 2019, then decreased by 1.0 percentage point from 2019 to 2020. Overall, during 2018-20, U.S. producers' capacity utilization increased by 3.5 percentage points. The increase in capacity utilization reported by *** was largely offset by the decrease in

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[3] ***. The annual production capacity for this plant is *** wind towers. ***. *** U.S. producer questionnaire response, sections II-3a and II-3f; and emails from ***, May 6, 2021 and May 26, 2021.

[4] *** reported that production capacity, when calculated on a per tower basis, ***. *** U.S. producer questionnaire response, section II-17.

[5] ***. However, in late 2020, Arcosa's production volumes decreased and ahead of expiration of the tax credit, issued WARN notice to 148 employees in the Clinton, Illinois facility of upcoming layoffs. Email from ***, May 5, 2021 and Wind manufacturer Arcosa plans mass layoffs in booming market, S&P Global Market Intelligence, October 12, 2020.

capacity utilization reported by ***.[6] *** reported full capacity utilization throughout 2018-20.

All U.S. producers *** reported constraints affecting their firm's production of wind towers. Such constraints include supply chain disruptions and limitations of equipment as well as the COVID-19 pandemic.[7]

Table III-4
Wind towers: U.S. producers' capacity, by firm and period

Quantity in units

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	3,609	3,687	3,682

Table continued.

Table III-4 Continued
Wind towers: U.S. producers' production, by firm and period

Quantity in units

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	2,672	2,895	2,854

Table continued on next page.

[6] ***. Email from ***, May 10, 2021.
[7] U.S. producer questionnaire responses, section II-3e.

Table III-4 Continued
Wind towers: U.S. producers' capacity utilization, by firm and period

Capacity utilization ratios is production to production capacity in percent

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	74.0	78.5	77.5

Table continued.

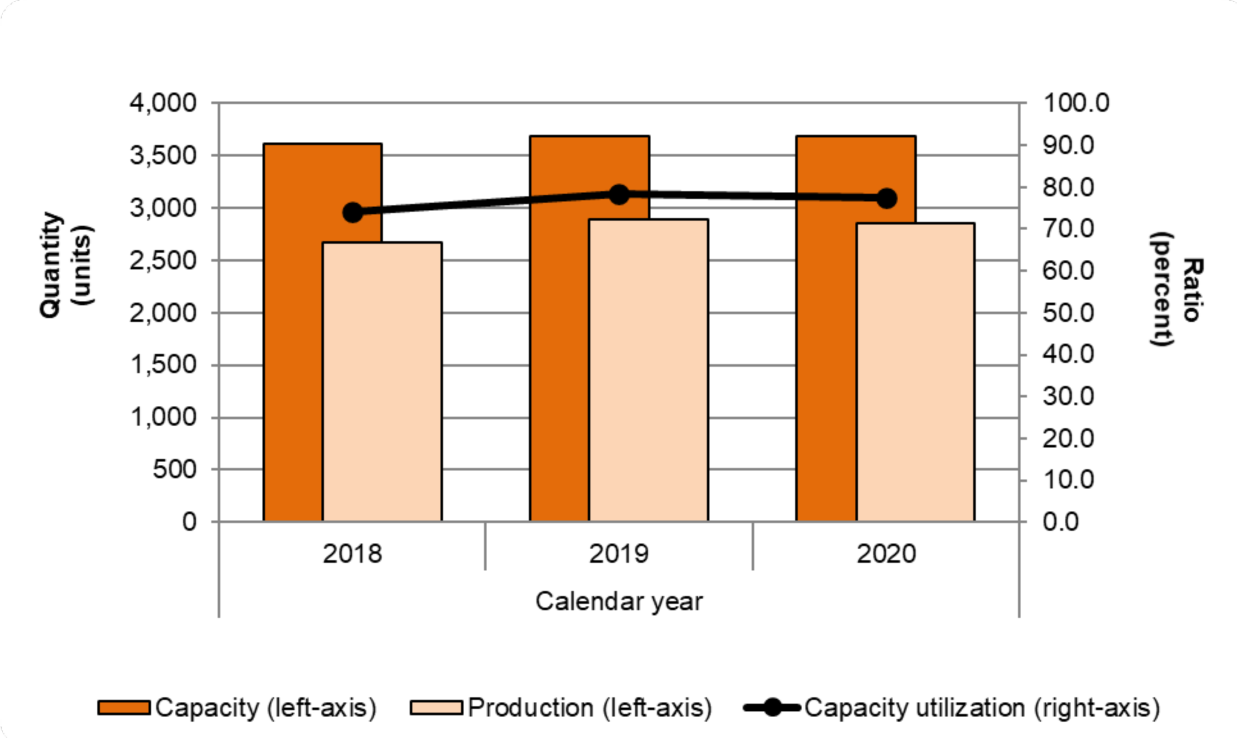
Table III-4 Continued
Wind towers: U.S. producers' share of production, by firm and period

Share in percent

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	100.0	100.0	100.0

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

Figure III-1
Wind towers: U.S. producers' production, capacity, and capacity utilization, by period



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

Alternative products

As shown in table III-5, more than *** percent of the product produced during 2018-20 by U.S. producers was wind towers. *** reported producing *** on the same equipment used to produce wind tower.[8]

Table III-5
Wind towers: U.S. producers' overall plant capacity and production on the same equipment as subject production, by period

Quantity in units; ratios is production to production capacity in percent; share is share of total production in percent

Item	Measure	2018	2019	2020
Overall capacity	Quantity	***	***	***
Wind towers production	Quantity	2,672	2,895	2,854
Other production	Quantity	***	***	***
Total production	Quantity	***	***	***
Overall capacity utilization	Ratio	***	***	***
Wind towers production	Share	***	***	***
Other production	Share	***	***	***
Total production	Share	100.0	100.0	100.0

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

Note: Overall capacity includes ***. Emails from ***, May 6, 2021 and May 26, 2021.

[8] ***. Email from ***, May 10, 2021.

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

Table III-6 presents U.S. producers' U.S. shipments, export shipments, and total shipments. U.S. shipments accounted for all shipments by responding U.S producers during 2018-20 as no U.S. producers reported export shipments. During 2018-19, U.S. producers' U.S. shipments, in terms of quantity, increased by 9.9 percent, then decreased by 7.4 percent from 2019 to 2020. Overall, during 2018-20, U.S. producers' U.S. shipments, in terms of quantity, increased by 1.7 percent. While *** U.S. producers increased U.S. shipments between 2018 and 2019, *** had lower U.S. shipments in 2020 than in 2019. The value of U.S. producers' U.S. shipments also fluctuated throughout the period for which data were collected. During 2018-19, U.S. producers' U.S. shipments, in terms of value, increased by 15.8 percent, then decreased by 4.1 percent from 2019 to 2020. Overall, during 2018-20, U.S. producers' U.S. shipments, in terms of value, increased by 11.0 percent.

The unit value of responding U.S. producers' U.S. shipments increased in each year during 2018-20, ending 9.2 percent higher in 2020 than in 2018. The unit value of responding U.S. producers' U.S. shipments increased from $318,619 per wind towers in 2018 to $347,870 per wind tower in 2020. The unit value of U.S. shipments for *** increased between 2018 and 2019, while three firms, ***, had lower unit values in 2020 compared to 2019.

Table III-6
Wind towers: U.S. producers' shipments, by destination and period

Quantity in units; value in 1,000 dollars; unit value in dollars per units; share of quantity is the share of total shipments by quantity in percent; share of value is the share of total shipments by value in percent

Item	Measure	2018	2019	2020
U.S. shipments	Quantity	2,698	2,964	2,744
Export shipments	Quantity	---	---	---
Total shipments	Quantity	2,698	2,964	2,744
U.S. shipments	Value	859,633	995,106	954,555
Export shipments	Value	---	---	---
Total shipments	Value	859.633	995,106	954,555
U.S. shipments	Unit value	318,619	335,731	347,870
Export shipments	Unit value	---	---	---
Total shipments	Unit value	318,619	335,731	347,870
U.S. shipments	Share of quantity	100.0	100.0	100.0
Export shipments	Share of quantity	---	---	---
Total shipments	Share of quantity	100.0	100.0	100.0
U.S. shipments	Share of value	100.0	100.0	100.0
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.

Table III-7 presents U.S. producers' U.S. shipments by shipment type. Commercial U.S. shipments, in terms of quantity, accounted for the majority of U.S. producers' U.S. shipments during 2018-20 (*** percent in 2018, *** percent in 2019, *** percent in 2020). Overall, during 2018-20, U.S. producers' commercial shipments increased, in terms of quantity, by *** percent (*** percent, in terms of value). The unit value of U.S. producers' commercial U.S. shipments increased throughout the period for which data were collected from $*** per wind tower in 2018 to $*** per wind tower in 2019 and $*** per wind tower in 2020.

*** reported transfers to related firms accounting for the remainder of collective responding U.S. producers' U.S. shipments during 2018-20.[9] During 2018-20, U.S. producers' transfers to related firms, in terms of quantity and in terms of value decreased by *** percent and by *** percent, respectively. The unit value of U.S. producers' transfers to related firms increased from $*** per wind tower in 2018 to $*** per wind tower in 2019 and $*** per wind tower in 2020. No U.S. producer reported internal consumption or export shipments during 2018-20. The Commission requested additional information regarding U.S. producers' U.S. shipments of wind towers by geographic region. These data and corresponding analyses can be found in Part II and Appendix L.

[9] ***. *** U.S. producer questionnaire response, sections II-7 and II-11.

Table III-7
Wind towers: U.S. producers' U.S. shipments by type and period

Quantity in units; value in 1,000 dollars; unit value in dollars per units; share of quantity is the share of U.S. shipments by quantity in percent; share of value is the share of U.S. shipments by value in percent

Item	Measure	2018	2019	2020
Commercial U.S. shipments	Quantity	***	***	***
Transfers to related firms	Quantity	***	***	***
U.S. shipments	Quantity	2,698	2,964	2,744
Commercial U.S. shipments	Value	***	***	***
Transfers to related firms	Value	***	***	***
U.S. shipments	Value	859,633	995,106	954,555
Commercial U.S. shipments	Unit value	***	***	***
Transfers to related firms	Unit value	***	***	***
U.S. shipments	Unit value	318,619	335,731	347,870
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.

Table III-8 presents U.S. producers' quarterly backlog for 2020. Overall, during 2020, U.S producers' backlog was lower at the end of the year than it had been at the beginning. U.S. producers' wind tower deliveries remained stable during the first three quarters of 2020 but ended a last quarter with half as many deliveries as in each of the first three quarters. In the first and fourth quarters, U.S. producers' end-of-period backlog was 564 wind towers and 413 wind towers greater than towers delivered during each quarter, respectively. During the second and third quarters, U.S. producers' end-of-period backlog was roughly the same as wind towers delivered during each respective quarter.

Table III-8
Wind towers: U.S. producers' backlog during 2020

Item	Backlog at the beginning of the period (units)	New orders (units)	Towers delivered (units)	Backlog at the end of the period(units)	Avg. production rate (units/month)
1st quarter 2020	2,138	650	1,112	1,676	480
2nd quarter 2020	1,676	405	1,060	1,021	374
3rd quarter 2020	1,021	1,064	1,068	1,147	440
4th quarter 2020	1,147	376	532	945	233

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

Note: Data may be overstated. ***. *** U.S. producer questionnaire response, sections II-7 and II-8.

Note: ***. Email from ***, May 6, 2021.

Note: ***. Email from ***, May 10, 2021.

Captive consumption

Section 771(7)(C)(iv) of the Act states that–[10]

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

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[11]

As reported in table III-7 above, transfers to related firms accounted for between *** percent and *** percent, in terms of quantity, and between *** percent and *** percent, in terms of value, of U.S. producers' U.S. shipments of wind towers during 2018-20.

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. *** reported ***. No U.S. producer, however, reported diverting wind towers intended for internal consumption to the merchant market.

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

[11] In the preliminary phase of these investigations the Commission found that both internal transfers and merchant market shipments constituted significant portions of domestic production and determined that the first statutory criterion had been met. Regarding the second statutory criterion, the Commission found that wind towers were not the predominant material input of the downstream product in which they are used, wind turbines. Therefore, the Commission concluded that the criteria for application of the captive production provision were not satisfied in the preliminary phase of these investigations. Preliminary phase publication, pp. 20-21.

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. Table III-9 presents data on the share of wind tower's contribution to the production of out-of-scope wind turbines. With respect to the downstream articles resulting from captive production, wind towers reportedly comprise *** percent of the finished cost of completed wind turbines. See part II for additional information related to cost share.

Table III-9
Wind towers: * share of contribution to wind turbines**

Shares in percent

Item	Share of value (percent)	Share of quantity (percent)
Wind towers	***	***
All other material inputs	***	***
All inputs	100.0	100.0

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

U.S. producers' inventories

Table III-10 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**.** U.S. producers' end-of-period inventories decreased by *** percent from 2018 to 2019, then increased by *** percent from 2019 to 2020.[12] Overall, U.S. producers' end-of-period inventories increased by *** percent during 2018-20.[13] During 2018-20, U.S. producers' end-of-period inventories as a ratio to U.S. production, U.S. shipments, and total shipments fluctuated throughout the period for which data were collected but overall increased by *** percentage points, *** percentage points, and *** percentage points, respectively.

Table III-10
Wind towers: U.S. producers' inventories, by period

Quantity in units; ratios are inventories to production and shipments

Item	2018	2019	2020
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.

[12] *** were the only U.S. producers to report end-of-period inventories throughout the period for which data were collected. Petitioners state that US producers' typically do not carry inventory as the towers are produced to a specific tower design for each order. Conference transcript, p. 66 (Blashford).

[13] The difference in end-of-period inventories during 2018-20 reflects *** operations as their end-of-period inventories were ***, respectively, in 2018, and ***, respectively, in 2020.

U.S. producers' imports and purchases

U.S. producers' imports and purchases of wind towers are presented in tables III-11 and III-12. As discussed previously, ***, reported imports of wind towers from ***. *** reported that it imports ***.[14] ***. During 2019-20, the ratio of *** U.S. imports from India and Malaysia to its U.S. production increased by *** percentage points and by *** percentage points, respectively. Overall, during 2018-20, the ratio of *** U.S. imports from Spain to its U.S. production increased by *** percentage points. Overall, the ratio of *** U.S. imports from subject sources to its production increased from *** percent in 2018 to *** percent in 2020. The ratio of *** U.S. imports from nonsubject sources to its U.S. production decreased from *** percent in 2018 to *** percent in 2020.

Table III-11
Wind towers: * U.S. production, U.S. imports, and ratio of import to production, by period**

Quantity in units; ratios are ratios of imports to U.S. production in percent

Item	Measure	2018	2019	2020
U.S. production	Quantity	***	***	***
Imports from India	Quantity	***	***	***
Imports from Malaysia	Quantity	***	***	***
Imports from Spain	Quantity	***	***	***
Imports from subject sources	Quantity	***	***	***
Imports from nonsubject sources	Quantity	***	***	***
Imports from all sources	Quantity	***	***	***
Imports from India to U.S. production	Ratio	***	***	***
Imports from Malaysia to U.S. production	Ratio	***	***	***
Imports from Spain to U.S. production	Ratio	***	***	***
Imports from subject sources to U.S. production	Ratio	***	***	***
Imports from nonsubject sources to U.S. production	Ratio	***	***	***
Imports from all sources to U.S. production	Ratio	***	***	***

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

Note: *** nonsubject imports are from ***. *** U.S. producer questionnaire response, section II-8a.

[14] *** importer/purchaser questionnaire response, section II-4.

Table III-12
Wind towers: U.S. producers' reasons for imports by firm

Item	Firm's narrative response
***'s reason for importing	***

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

U.S. employment, wages, and productivity

Table III-13 shows U.S. producers' employment-related data. During 2018-20, the number of production related workers ("PRWs") increased by 7.5 percent.[15] During 2018-20, total hours worked, hours worked per PRW, and wages increased by 10.2 percent, by 2.5 percent and by 8.2 percent, respectively.[16] Hourly wages, productivity, and unit labor costs fluctuated throughout the period for which data were collected.

Table III-13
Wind towers: U.S. producers' employment related information, by period

Item	2018	2019	2020
Production and related workers (PRWs) (number)	2,051	2,145	2,205
Total hours worked (1,000 hours)	4,276	4,571	4,713
Hours worked per PRW (hours)	2,085	2,131	2,137
Wages paid ($1,000)	156,739	160,145	169,516
Hourly wages (dollars per hour)	$36.66	$35.04	$35.97
Productivity (units per 10,000 hours)	6.2	6.3	6.1
Unit labor costs (dollars per unit)	$58,660	$55,318	$59,396

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

[15] ***. Email from ***, May 6, 2021.
[16] ***. Email from ***, May 11, 2021.

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

U.S. importers

The Commission issued importer questionnaires to eleven firms believed to be importers of subject wind towers, as well as to all U.S. producers of wind towers.[1] Usable questionnaire responses were received from seven companies, representing the vast majority (*** percent) of U.S. imports from India, Malaysia, and Spain in 2020 under HTS statistical reporting number 7308.20.0020, a category that includes towers of various sizes as well as lattice masts.[2] Table IV-1 lists all responding U.S. importers of wind towers from India, Malaysia, Spain, and other sources, their locations, and their shares of U.S. imports, in 2020.

[1] The Commission issued questionnaires to those firms identified in the petition, along with firms that, based on a review of data from third-party sources, may have accounted for more than one percent of total imports under HTS subheading 7308.20.0020 in 2020.

[2] An additional firm, ***. *** importer/purchaser questionnaire response, sections I-7 and II-8.

Table IV-1
Wind towers: U.S. importers, their headquarters, and share of total imports by source, 2020

Shares in percent

Firm	Headquarters	Share of reported imports from India	Share of reported imports from Malaysia	Share of reported imports from Spain	Share of reported imports from subject sources	Share of reported imports from nonsubject sources	Share of reported imports from all sources
CS Wind	Cheonan, South Korea	***	***	***	***	***	***
GE	Schenectady, NY	***	***	***	***	***	***
Kousa	Los Angeles, CA	***	***	***	***	***	***
Nordex	Chicago, IL	***	***	***	***	***	***
Rattlesnake	Chicago, IL	***	***	***	***	***	***
Siemens	Orlando, FL	***	***	***	***	***	***
Vestas	Portland, OR	***	***	***	***	***	***
All firms	Various	100.0	100.0	100.0	100.0	100.0	100.0

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

Note: ***.

Note: ***.

Note: ***. Emails from ***, June 16, 2021; ***, June 17, 2021; and ***, June 21, 2021.

U.S. imports

Table IV-2 and figure IV-1 present data for U.S. imports of wind towers from India, Malaysia, Spain, and all other sources. U.S. imports of wind towers from subject sources during 2018-20 accounted for an increasing share of total imports of wind towers, increasing from *** percent in 2018 to *** percent in 2020, in terms of quantity. In 2019, *** began importing wind towers from India and *** began importing wind towers from Malaysia.[3] U.S. imports from India and Malaysia increased, in terms of quantity, from 2019 to 2020 accounting for *** percent and *** percent of total U.S. imports, respectively, in 2019 and *** percent and *** percent of total U.S. imports, respectively, 2020. U.S. imports from Spain, in terms of quantity, accounted for an increasing share of total imports during 2018-20 (*** percent in 2018 and *** percent in 2020). U.S. imports from nonsubject sources, in terms of quantity, accounted for the largest share of total imports during 2018-20; however, as share of total imports, in terms of quantity, decreased by *** percentage points over this period (*** percent in 2018 and *** percent in 2020).[4]

During 2018-20, U.S. imports of wind towers from subject sources increased, in terms of quantity, and value by *** percent and by *** percent, respectively. The unit value of imports from subject sources decreased from $*** per wind tower in 2018 to $*** per wind tower in 2019, but then increased to $*** per wind tower in 2020.

[3] ***. ***. Emails from ***, May 20, 2021; and ***, May 21, 2021.

[4] Responding importers reported *** as sources for nonsubject U.S. imports of wind towers. Importer/purchasers questionnaire responses, section II-8a.

Table IV-2
Wind towers: U.S. imports by source and period

Quantity in units; value in 1,000 dollars; unit value in dollars per unit

Source	Measure	2018	2019	2020
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	1,141	2,130	2,318
India	Value	***	***	***
Malaysia	Value	***	***	***
Spain	Value	***	***	***
Subject sources	Value	***	***	***
Nonsubject sources	Value	***	***	***
All import sources	Value	284,232	580,769	773,659
India	Unit value	***	***	***
Malaysia	Unit value	***	***	***
Spain	Unit value	***	***	***
Subject sources	Unit value	***	***	***
Nonsubject sources	Unit value	***	***	***
All import sources	Unit value	249,108	272,662	333,761

Table continued on next page.

Table IV-2 Continued
Wind towers: U.S. imports by source and period

Share of quantity is the share of U.S. imports by quantity in percent; share of value is the share of U.S. imports by value in percent; ratio are U.S. imports to U.S. production in percent

Source	Measure	2018	2019	2020
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	100.0	100.0	100.0
India	Share of value	***	***	***
Malaysia	Share of value	***	***	***
Spain	Share of value	***	***	***
Subject sources	Share of value	***	***	***
Nonsubject sources	Share of value	***	***	***
All import sources	Share of value	100.0	100.0	100.0
India	Ratio	***	***	***
Malaysia	Ratio	***	***	***
Spain	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
All import sources	Ratio	42.7	73.6	81.2

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

Responding U.S. importers did not report U.S. imports of wind towers from India or Malaysia during 2018. During 2019-20, U.S. imports from India, in terms of quantity and in terms of value, increased by *** percent and by *** percent, respectively. As a result of quantity increasing at a higher rate than value, the unit value of U.S. imports from India decreased from $*** per wind tower in 2019 to $*** per wind tower in 2020.

During 2019-20, U.S. imports from Malaysia, in terms of quantity and in terms of value, increased by *** percent and by *** percent, respectively.[5] As a result of value increasing at a higher rate than quantity, the unit value of U.S. imports from Malaysia increased from $*** per wind tower in 2019 to $*** per wind tower in 2020.

During 2018-20, U.S. imports from Spain, in terms of quantity and value, increased by *** percent and by *** percent, respectively, with the majority of the increase occurring from 2019 to 2020. As a result of quantity increasing at a higher rate than value, the unit value of

[5] Reported U.S. imports of wind towers from Malaysia for 2020 is likely ***. In 2020, U.S. importers reported importing *** wind towers from Malaysia and CS Wind Malaysia, the sole producer of wind towers in Malaysia, reported exporting *** wind towers to the United States. For 2021, U.S. importers reported arranging the importation of *** wind towers from Malaysia, while CS Wind Malaysia projects 2021 exports to the U.S. to be *** wind towers. Importer/purchaser questionnaire responses, section II-3a; and ***, section II-8.

U.S. imports from Spain decreased from $*** per wind tower in 2018 to $*** per wind tower in 2019 and $*** per wind tower in 2020.[6]

During 2018-19, U.S. imports of wind towers from nonsubject sources increased, in terms of quantity and in terms of value, by *** percent and by *** percent, respectively. Then, during 2019-20 U.S. imports decreased, in terms of quantity and in terms of value, by *** percent and by *** percent. Overall, during 2018-20, U.S. imports from nonsubject sources increased, in terms of quantity and in terms of value, by *** percent and by *** percent, respectively. The unit value of U.S. imports from nonsubject sources, which were consistently lower than those of subject imports during 2018-20, increased from $*** per wind tower in 2018 to $*** per wind tower in 2019 and then increased to $*** per wind tower in 2020.

[6] The decrease in unit value of U.S. imports from Spain is largely driven by ***. From 2018 to 2019 the unit value of *** U.S. imports from Spain decreased from $*** per wind tower in 2018 to $*** per wind tower in 2019 and $*** per tower in 2020.

Figure IV-1
Wind towers: U.S. import quantities and average unit values, by source and period

* * * * * * *

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[7] 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.[8] U.S. imports from India, Malaysia, and Spain accounted for *** percent, *** percent, and *** percent, respectively, of total U.S. imports of wind towers, by quantity, during the twelve months preceding the petitions. Table IV-3 presents the share of total U.S. imports, by quantity, attributable to India, Malaysia, Spain, and nonsubject sources during September 2019 through August 2020.

[7] 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)).

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

Table IV-3
Wind towers: U.S. imports in the twelve month period preceding the filing of the petition, September 2019 through August 2020

Quantity in units; share of quantity in percent

Source of imports	Quantity	Share of quantity
India	***	***
Malaysia	***	***
Spain	***	***
Subject sources	***	***
Nonsubject sources	***	***
All import sources	***	100.0

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

Reported U.S. imports of wind towers from Malaysia during September 2019 through August 2020 is likely ***. ***. Emails from ***, June 17, 2021; and ***, June 21, 2021.

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 II. Additional information concerning fungibility, geographical markets, and simultaneous presence in the market is presented below.

Fungibility

Table IV-4 and figure IV-2 present U.S. producers' commercial U.S. shipments and U.S. importers' imports of wind towers by height for 2020. The four categories are 81 meters to 90 meters; 91 meters to 100 meters; 101 meters to 110 meters; and 111 meters to 120 meters. U.S. producers reported commercial U.S. shipments of wind towers measuring 81 meters to 110 meters in 2020, with the vast majority of their U.S. shipments were towers measuring 81 to 90 meters. U.S. importers reported imports of wind towers from India in all four categories in 2020, with the vast majority of these imports measuring 91 to 110 meters. U.S. importers reported imports of wind towers from Malaysia measuring 81 meters to 100 meters and 111 meters to 120 meters in 2020, with the vast majority of these measuring 81 to 100 meters. U.S. importers reported imports of wind towers from Spain in all four categories in 2020, with the vast majority of these imports measuring 81 to 90 meters.

Table IV-4
Wind towers: U.S. producers' commercial U.S. shipments and U.S importers' imports by height, 2020

Quantity in units

Source	More than 80 meters to 90 meters	More than 90 meters to 100 meters	More than 100 meters to 110 meters	More than 110 meters to 120 meters	All heights
U.S. producers	***	***	***	***	1,782
India	***	***	***	***	446
Malaysia	***	***	***	***	283
Spain	***	***	***	***	266
Subject sources	***	***	***	***	995
U.S. producers and subject U.S. importers	***	***	***	***	2,777

Table continued on next page.

Table IV-4 Continued
Wind towers: U.S. producers' commercial U.S. shipments and U.S importers' U.S. imports by height, 2020

Shares across in percent

Source	More than 80 meters to 90 meters	More than 90 meters to 100 meters	More than 100 meters to 110 meters	More than 110 meters to 120 meters	All heights
U.S. producers	***	***	***	***	100.0
India	***	***	***	***	100.0
Malaysia	***	***	***	***	100.0
Spain	***	***	***	***	100.0
Subject sources	***	***	***	***	100.0
U.S. producers and subject U.S. importers	***	***	***	***	100.0

Table continued.

Table IV-4 Continued
Wind towers: U.S. producers' commercial U.S. shipments and U.S importers' U.S. imports by height, 2020

Shares down in percent

Source	More than 80 meters to 90 meters	More than 90 meters to 100 meters	More than 100 meters to 110 meters	More than 110 meters to 120 meters	All heights
U.S. producers	***	***	***	***	***
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
U.S. producers and subject U.S. importers	100.0	100.0	100.0	100.0	100.0

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

Figure IV-2
Wind towers: U.S. producers' commercial U.S. shipments and U.S. importers' U.S. imports share of wind towers by height, 2020

* * * * * * *

Geographical markets

Table IV-5 presents the value of U.S. imports of towers and lattice masts under HTS statistical reporting number 7308.20.0020 in 2020 by border of entry based on official import statistics. The vast majority of imports of towers and lattice masts from India (90.3 percent), Malaysia (87.0 percent), and Spain (83.2 percent) entered the United States through ports located in the South. Data on U.S. producers' and U.S. importers' U.S. shipments of wind towers by geographic region are presented in Appendix L.

Table IV-5
Towers and lattice masts: Quantity of U.S. imports by border of entry, 2020

Value in 1,000s dollars

Source of imports	East	North	South	West	All borders
India	---	10,122	174,122	8,673	192,918
Malaysia	---	9,856	128,715	9,401	147,972
Spain	21,109	913	109,120	---	131,142
Subject sources	21,109	20,891	411,957	18,074	472,032
Nonsubject sources	18,102	99,500	242,763	41,699	402,064
All import sources	39,211	120,392	654,720	59,774	874,096

Table continued on next page.

Table IV-5 Continued
Towers and lattice masts: Value of U.S. imports by border of entry, 2020

Share across in percent

Source of imports	East	North	South	West	All borders
India	---	5.2	90.3	4.5	100.0
Malaysia	---	6.7	87.0	6.4	100.0
Spain	16.1	0.7	83.2	---	100.0
Subject sources	4.5	4.4	87.3	3.8	100.0
Nonsubject sources	4.5	24.7	60.4	10.4	100.0
All import sources	4.5	13.8	74.9	6.8	100.0

Table continued.

Table IV-5 Continued
Towers and lattice masts: Share of U.S. imports by border of entry, 2020

Share down in percent

Source of imports	East	North	South	West	All borders
India	---	8.4	26.6	14.5	22.1
Malaysia	---	8.2	19.7	15.7	16.9
Spain	53.8	0.8	16.7	---	15.0
Subject sources	53.8	17.4	62.9	30.2	54.0
Nonsubject sources	46.2	82.6	37.1	69.8	46.0
All import sources	100.0	100.0	100.0	100.0	100.0

Source: Compiled from official U.S. import statistics using HTS statistical reporting number 7308.20.0020, accessed May 13, 2021.

Presence in the market

Table IV-6 and figures IV-3 and IV-4 present monthly official U.S. import statistics for subject and nonsubject sources. Imports of towers and lattice masts from subject and nonsubject sources were present along with the domestic product during January 2018 through March 2021. U.S. imports of towers and lattice masts from India were present in 25 of the 39 months, entering more frequently in March 2019 through March 2021. U.S. imports of towers and lattice masts from Malaysia were present in 17 of the 39 months with all of those imports entering the United States during May 2019 through February 2021. U.S. imports of towers and lattice masts from Spain were present in 38 of the 39 months, entering every month except February 2018. U.S. imports of towers and lattice masts from nonsubject sources were present during each of the 39 months.

Table IV-6
Towers and lattice masts: U.S. imports by month, January 2018 through March 2021

Value in 1,000s dollars

Year	Month	India	Malaysia	Spain	Subject sources	Nonsubject sources	All import sources
2018	January	---	---	4,589	4,589	998	5,587
2018	February	21	---	---	21	741	762
2018	March	---	---	142	142	6,568	6,709
2018	April	---	---	29	29	6,952	6,981
2018	May	---	---	13,451	13,451	29,874	43,325
2018	June	---	---	48	48	9,295	9,343
2018	July	---	---	7,272	7,272	26,476	33,747
2018	August	---	---	2,534	2,534	49,381	51,915
2018	September	---	---	105	105	18,470	18,575
2018	October	---	---	408	408	3,515	3,923
2018	November	---	---	504	504	40,606	41,110
2018	December	---	---	187	187	25,507	25,694
2019	January	---	---	5,489	5,489	19,800	25,290
2019	February	---	---	649	649	11,626	12,275
2019	March	183	---	1,186	1,369	10,900	12,270
2019	April	68	---	553	622	9,469	10,091
2019	May	363	4,163	4,876	9,401	21,278	30,679
2019	June	253	---	914	1,168	43,475	44,643
2019	July	83	---	207	290	63,221	63,511
2019	August	55	12,329	8,543	20,927	65,949	86,876
2019	September	---	---	757	757	42,743	43,500
2019	October	19,819	5,874	436	26,129	29,329	55,457
2019	November	9,973	6,120	328	16,420	48,867	65,287
2019	December	3,248	---	28	3,277	51,351	54,627

Table continued on next page.

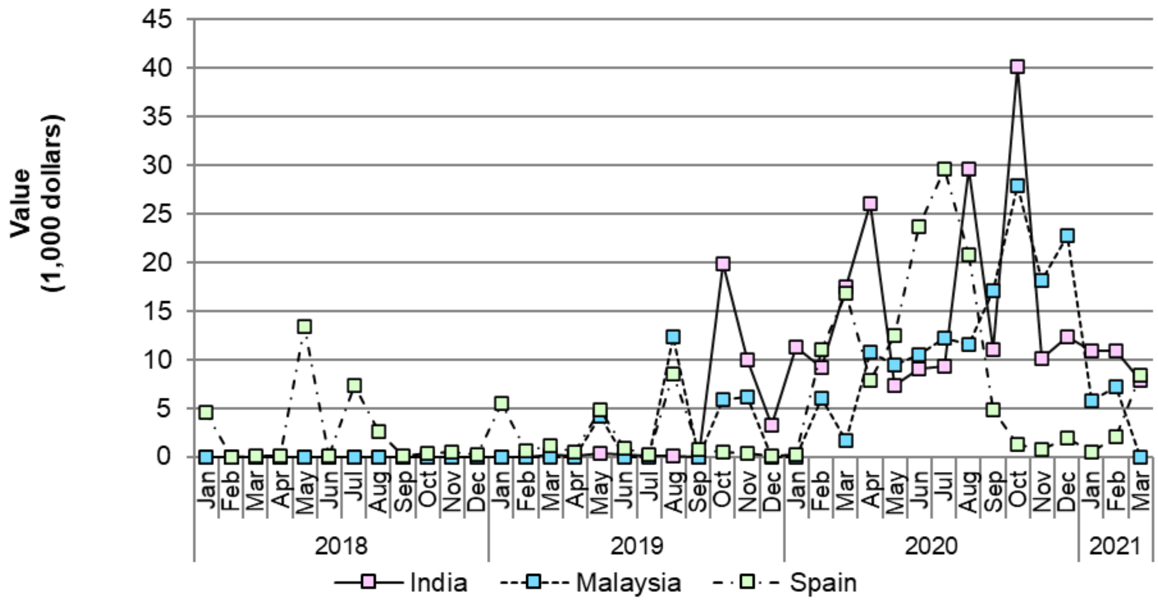
Table IV-6 Continued
Towers and lattice masts: U.S. imports by month, January 2018 through March 2021

Value in 1,000s dollars

Year	Month	India	Malaysia	Spain	Subject sources	Nonsubject sources	All import sources
2020	January	11,230	---	199	11,429	25,712	37,141
2020	February	9,226	6,082	11,081	26,390	27,945	54,335
2020	March	17,415	1,662	16,824	35,902	41,386	77,288
2020	April	26,098	10,796	7,881	44,775	25,669	70,445
2020	May	7,274	9,437	12,436	29,147	35,081	64,228
2020	June	9,046	10,502	23,605	43,154	62,142	105,295
2020	July	9,320	12,197	29,580	51,097	45,732	96,830
2020	August	29,568	11,490	20,800	61,858	60,261	122,119
2020	September	11,034	17,137	4,786	32,957	40,326	73,283
2020	October	40,162	27,824	1,290	69,276	15,645	84,922
2020	November	10,145	18,135	760	29,039	9,249	38,288
2020	December	12,398	22,710	1,899	37,008	12,916	49,924
2021	January	10,947	5,750	469	17,166	16,926	34,093
2021	February	10,913	7,191	2,081	20,185	23,703	43,888
2021	March	7,818	---	8,389	16,207	34,044	50,251

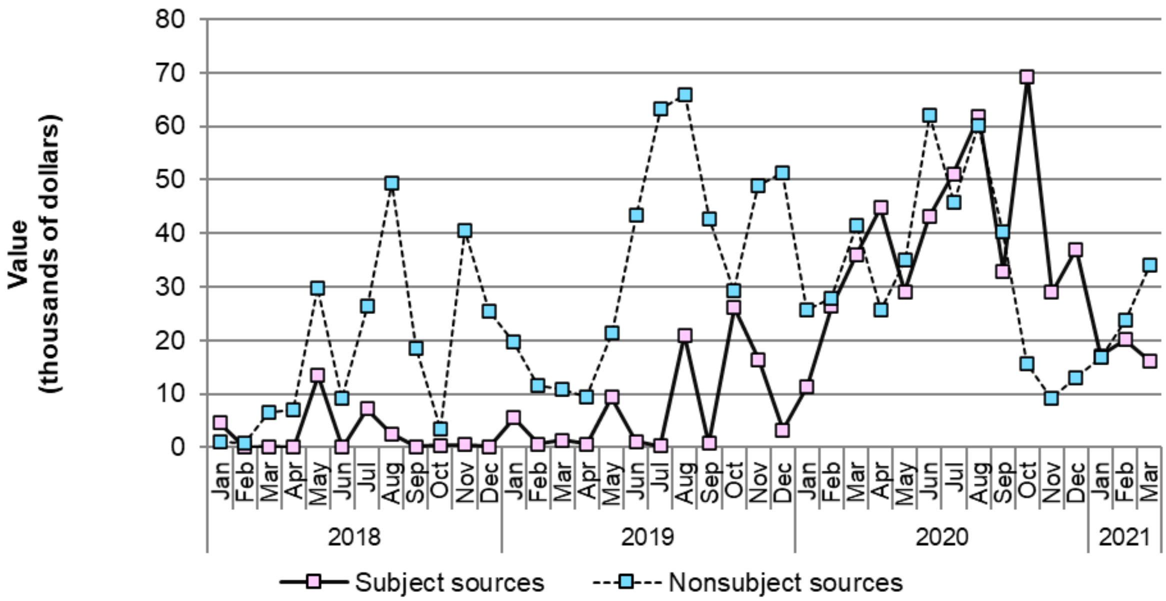
Source: Compiled from official U.S. import statistics using HTS statistical reporting number 7308.20.0020, accessed May 13, 2021.

Figure IV-3
Towers and lattice masts: U.S. imports from individual subject sources, by month, January 2018 through March 2021



Source: Compiled from official U.S. import statistics using HTS statistical reporting number 7308.20.0020, accessed May 13, 2021.

Figure IV-4
Towers and lattice masts: U.S. imports from aggregated subject and nonsubject sources, by month, January 2018 through March 2021



Source: Compiled from official U.S. import statistics using HTS statistical reporting number 7308.20.0020, accessed May 13, 2021.

Apparent U.S. consumption

Table IV-7 and figure IV-5 present data on apparent U.S. consumption for wind towers during 2018-20. During 2018-20, apparent U.S. consumption increased, in terms of quantity, by 37.1 percent (57.5 percent by value).

Table IV-7
Wind towers: Apparent U.S. consumption, by source and period

Quantity in units; value in 1,000 dollars

Source	Measure	2018	2019	2020
U.S. producers	Quantity	2,698	2,964	2,744
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	1,064	2,138	2,412
All sources	Quantity	3,762	5,102	5,156
U.S. producers	Value	859,633	995,106	954,555
India	Value	***	***	***
Malaysia	Value	***	***	***
Spain	Value	***	***	***
Subject sources	Value	***	***	***
Nonsubject sources	Value	***	***	***
All import sources	Value	259,145	582,761	807,957
All sources	Value	1,118,778	1,577,867	1,762,512

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

Note: Apparent U.S. consumption was constructed using U.S. producers' U.S. shipments of wind towers and U.S. importers' U.S. shipments of imports of wind towers.

Figure IV-5
Wind towers: Apparent U.S. consumption, by source and period

* * * * * * *

U.S. market shares

Table IV-8 presents data on market shares for the total U.S. market. U.S. producers' market share, in terms of quantity, decreased by *** percentage points from 2018 to 2019 and by *** percentage points from 2019 to 2020, ending *** percentage points lower in 2020 than in 2018. The market share of subject imports, in terms of quantity, increased by *** percent during 2018-20. After increasing by *** percentage points from 2018 to 2019, the market share of nonsubject imports, in terms of quantity, decreased by *** percentage points from 2019 to 2020, ending *** percentage points lower in 2020 than in 2018.

Table IV-8
Wind towers: Market shares, by source and period

Shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	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	***	***	***
India	Share of value	***	***	***
Malaysia	Share of value	***	***	***
Spain	Share of value	***	***	***
Subject sources	Share of value	***	***	***
Nonsubject sources	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.

Part V: Pricing data

Factors affecting prices

Raw material costs

Raw materials account for a substantial share of the cost-of-goods sold ("COGS") for wind towers. During 2018-20, raw materials' share of COGS increased from 70.8 percent to 73.9 percent. In some cases, wind turbine manufacturers provide raw materials for wind tower production or require U.S. producers to purchase raw materials such as steel plate and steel flanges from specific suppliers at specified prices. In these situations, the negotiations take place over "conversion price contracts," described below and in more detail in Part VI.

Steel plate is the principal raw material used in making wind towers, along with flanges, paint, and interior parts.[1] As shown in figure V-1, the producer price index ("PPI") for hot-rolled steel plate bars, plate, and structural shapes increased steadily from January to September 2018, before decreasing over the course of 2019. Prices from January 2020 through December 2020 fluctuated within a small range. From January 2018 to December 2020, the index increased by 6 percent. In the first quarter of 2021, the index increased sharply, rising above its 2018-20 high by March 2021.

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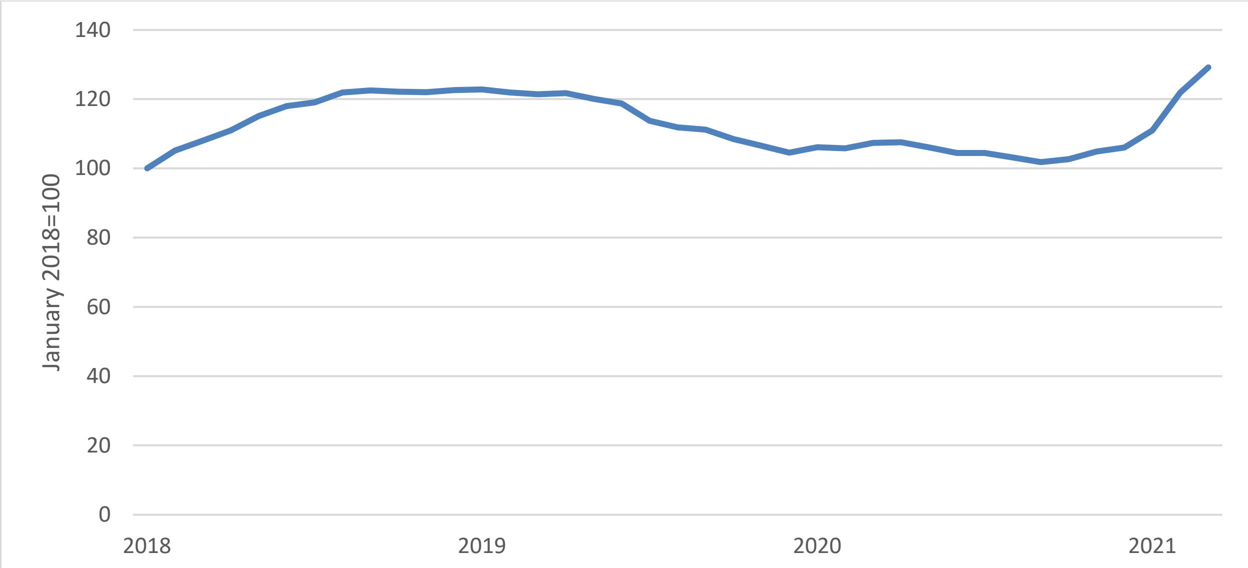
[1] Publication 5101, p. V-1. See Part VI for detailed cost breakdowns.

Figure V-1
Producer price index: Hot-rolled steel bar, plate, and structural shapes, January 2018 to March 2021



Source: Bureau of Labor Statistics via the St. Louis Federal Reserve Bank, accessed April 15, 2021.

Note: The underlying data for figure V-1 is in appendix H.

Four of six responding U.S. producers described raw material prices as having fluctuated since January 1, 2018; the other two reported raw material prices had increased. All five responding importers reported raw material costs in the United States had increased, and five of seven responding importers reported raw material costs had increased in subject countries.

Impact of section 232 tariffs

As described in Part I, on March 8, 2018, the President announced his decision to impose 25 percent ad valorem duties on steel mill products from multiple U.S. trading partners, pursuant to Section 232 of the Trade Expansion Act of 1962 (19 U.S.C. §1862). U.S. producers were asked how the section 232 tariffs affected their raw material costs and the prices of wind towers. Two U.S. producers reported the section 232 tariffs did not change the price of raw materials, two producers reported that the tariffs caused the cost of raw materials to fluctuate, and two producers reported that the 232 tariffs increased raw material costs. Five of seven (***) responding importers[2] reported the section 232 tariffs had increased the overall

[2] Seven firms responded to the importer/purchaser questionnaire. All seven imported wind towers and are referred to as importers in their responses to the questions in the importer sections of the questionnaire. Five were OEMs, these firms were also asked to respond to the purchaser section of the (*continued...*)

cost of raw materials. Two importers (***) reported that the section 232 tariffs caused no change in the overall cost of raw materials.

Half the responding U.S. producers indicated that the section 232 tariffs did not change the price of wind towers, and two reported the tariffs had caused the price of wind towers to fluctuate. One U.S. producer, ***, reported that these tariffs caused an increase in wind tower prices. In contrast, half of the responding importers (3 of 6) reported that the section 232 tariffs had increased the price of wind towers. Three importers (***) reported that the section 232 tariffs had not changed the price of wind towers.

Transportation costs to the U.S. market

During 2020, transportation costs for wind towers shipped from subject countries to the United States averaged 38.0 percent for India, 29.0 percent for Malaysia, and 24.4 percent for Spain. These estimates were derived from official import data and represent transportation and other charges on imports.[3]

U.S. inland transportation costs

In questionnaire responses, five of six responding U.S. producers[4] reported that their customers arranged transportation of U.S. produced wind towers. Importers were asked separately if they arranged for transportation of their purchases of U.S. wind towers, and if they arranged for the transportation of their imports. All four responding importers reported that they arranged transportation of U.S.-produced wind towers, and four of five reported that they typically arrange transportation of their imports.

Since most U.S. producers do not arrange transportation, they were not asked to report U.S. inland transportation costs to their customers. Importers reported that U.S. inland transportation costs accounted for *** percent of the cost of domestically produced wind towers and *** percent of the cost of for imported wind towers. [5]

(…*continued*)
questionnaire. These firms are referred to as purchasers in their responses to the purchaser section of the questionnaire

[3] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2020 and then dividing by the customs value based on the HTS statistical reporting number 7308.20.0020.

[4] ***.

[5] ***.

Three of the four responding U.S. producers reported that their f.o.b. prices were the same regardless of the distance shipped.[6] Importer/purchaser ***.” Vestas claimed that “the transportation of towers represents a significant component of the total landed cost of the tower. In addition, transporting towers involves substantial planning and deliberation…due to various logistic limitations and challenges associated with transporting towers and the need for timely delivery of towers to project sites.” Vestas stated that transportation costs were considered from the beginning of the tower procurement process.[7]

Pricing practices

Pricing methods

U.S. producers reported setting prices using transaction-by-transaction negotiations and contracts (table V-1).[8] Most importers, however, reported transaction-by-transaction pricing and no contracts for their purchases of U.S. product.[9]

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[6] The other responding producer ***.
[7] Vestas posthearing brief, responses to Commissioner questions p. 3.
[8] ***. ***.
[9] ***. ***.

Table V-1
Wind towers: U.S. producers' reported price setting methods and the price setting purchasers report facing for U.S. produced wind towers and wind towers produced in subject countries, count

Method	U.S. producers	Purchases of U.S. product	Purchases of subject imports
Transaction-by-transaction	***	***	5
Contract	***	***	2
Set price list	***	***	0
Other	***	***	2
Responding firms	***	***	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.

Note: ***.

Contracts

U.S. producers reported that in 2020 they sold all of their wind towers under contracts lasting one year or less (table V-2). Importer/purchasers reported purchasing *** percent of their U.S. wind towers under contracts, with most contracts lasting one year or longer. For imports from subject countries, importer/purchasers reported purchasing or selling *** percent of wind towers in spot sales. ***.

Table V-2
Wind towers: U.S. producers' and importer/purchasers' shares of U.S. commercial shipments by type of sale, 2020

Share in percent.

Type of sale	U.S. producers	Importer/purchasers (U.S. produced)	Importer/purchasers (imported)
Long-term contracts	***	***	***
Annual contracts	***	***	***
Short-term contracts	***	***	***
Spot sales	***	***	***

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

Short-term contracts

Four U.S. producers (***) reported using short-term contracts. Two of these U.S. producers reported that their short-term contracts allow for price renegotiation and two indicated that their short-term contracts do not allow for price renegotiation. All four reported that their short-term contracts fix price and quantity. Three U.S. producers reported that prices were indexed to raw materials, and one reported that prices were not indexed to raw materials.[10] U.S. producers reported short-term contracts lasted from 120 to 180 days.[11]

Two purchasers (***) reported on their short-term contracts with U.S. producers. They both reported these contracts lasted 180 days, did not allow price renegotiations, and fixed price and quantity. One firm reported that prices were indexed to raw material prices and the other reported that prices were not indexed to raw material prices.

One importer (***) reported on its short-term contracts for wind towers from subject countries, reporting contracts of 180 days that fixed both price and quantity, did not allow for price renegotiation, and were not indexed to the cost of raw materials.

Annual contracts

Two U.S. producers (***) reported sales under annual contracts. Both reported that annual contracts fixed price and quantity and prices were indexed to raw materials. One reported that prices could be renegotiated during the contract and the other reported that prices could not be renegotiated during the contract.

One purchaser (***) reported that it purchases U.S.-produced wind towers using annual contracts. It reported that contracts fixed both price and quantity, prices were indexed to raw material costs, and prices could not be renegotiated during the contract.

One importer (***) reported one-year contracts for wind towers imported from subject countries. It reported that prices could be renegotiated during the contract, but otherwise did not provide details on these contracts.

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[10] Prices were reported to be indexed to the AMA #1 heavy melt using a collar methodology, whereby as long as the price remains within the collar the selling price of the wind towers was unchanged but if the price of the AMA #1 heavy melt went above and below the collar, the costs or savings were passed on the customer.

[11] Three of the four U.S. producers reported short-term contracts were for 180 days.

Long-term contracts

Although no U.S. producer reported sales using long-term contracts in 2020, two responding producers (***) reported details of their long-term contracts. Their long term contracts tended to last for three years, allow for price renegotiations during the contract, and were indexed to raw material costs. One producer reported that their long-term contracts fix quantity and the other reported that contracts fix both price and quantity.

Only one importer/purchaser (***) reported any long-term contracts for purchases of U.S. produced wind towers. None of the importer/purchasers reported long term contracts for wind towers imported from subject countries. None of the importer/purchasers reported details of their long-term contacts.

Petitioners stated that sales have been shifting from long-term contracts to more project-based sales.[12] Long-term contracts commit purchasers to purchase a minimum volume over time and create smooth production in wind tower producer plants, resulting in more even labor and capacity utilization.[13] Petitioners stated, however, that some OEMs refuse to honor their contracts, delaying purchases committed to the contracts or asking for producers to renegotiate their conversion price during the contract.[14] According to petitioners, under long-term contracts, wind tower producers reserve capacity for the purchaser and are thus not able to bid this capacity out to other possible purchasers. If the purchaser does not purchase the minimum amount under the contract, the wind tower producers' production is reduced.[15] Petitioners added that prices and quantities tend to lag changes in the market and reflect competition from earlier periods.[16]

Purchase frequency

Most purchasers (3 of 5) reported that they purchase product on an as needed basis, one (***) reported monthly purchases, and one (***) reported annual purchases. Three of five responding firms reported that their purchasing frequency had not changed since 2018, and two reported their purchase frequency had decreased. Firms reported contacting two to eight suppliers before making a purchase.

[12] Petitioners' posthearing brief, answers to Commissioner questions p. 11.
[13] Petitioners' posthearing brief, answers to Commissioner questions p. 14.
[14] Petitioners' posthearing brief, answers to Commissioner questions pp. 13-16.
[15] Conference transcript, p. 94 (Blashford).
[16] Petitioners' postconference brief, p. 12.

Conversion price contracts and contracts with a conversion price component

Wind tower transactions are sometimes conducted as "conversion price contracts" in which the purchaser negotiates the price of inputs used in the wind towers with the firms that supply these products and tells the wind tower producer the source and price of the inputs the producer is to use.[17] The wind tower producer and wind tower purchaser then negotiate a conversion price which covers the costs of labor, and inputs such as paint and weld wire, and includes any mark-up.[18] Under formal conversion contracts, the only price that is negotiated is the conversion price.[19] ***. Different firms, however, have identified a range of purchase arrangements that may include some conversion price component as conversion contracts.

Four of six responding U.S. producers reported at least some sales using conversion price contracts. Two of these firms (***) reported 99 and 100 percent of their sales were under conversion contracts, while two (***) reported 2 and 3 percent were under conversion contracts. Three U.S. producers reported that they had conversion contracts with ***, three with ***, and two with ***. These conversion contracts typically excluded steel, fixtures, power cables, platforms, and bus bars from the negotiated price.[20] Two of the U.S. producers reported that their conversion contracts with *** excluded all five of these inputs, while the other producer's contract excluded four inputs but did not excluded bus bars. Both conversion contracts with *** excluded all 5 inputs listed above. Both conversion contracts with *** excluded four of the 5 inputs but included steel.

[17] Conference transcript, pp. 52 (Blashford).

[18] Conference transcript, pp. 21-22, 73, 84 (Bourland). ***.

[19] Based on the financial information, effective conversion prices as a ratio to net sales decreased from *** percent in 2018 to *** percent in 2020. Effective conversion price to net sales ratio equals sales value minus total raw material cost (numerator) divided by total sales value (denominator). It is also the inverse of the raw material cost to net sales ratio; i.e., in the same way that that the COGS to net sales ratio is the inverse of the gross profit to net sales ratio. See table VI-1.

[20] None of the firms reported that paint was excluded from the conversion contract.

Producers were also asked about trends in conversion costs. *** reported that its conversion prices per tower had increased because it was producing taller towers later in the period, but that its conversion costs were constrained. ***.

While the U.S. producers reported using conversion contracts with three purchasers, only one purchaser (***) reported using conversion contracts. It reported conversion contracts with U.S. producers *** and with foreign producers ***. The conversion contracts that *** reported with U.S. producers *** excluded five inputs (steel, fixtures, power cables, platforms, and bus bars). Its ***. See Part VI for more detail on conversion costs and conversion price to sales ratio.

Sales terms and discounts

Five out of six responding U.S. producers reported that they typically quote prices on an f.o.b. basis.[21] Four of five responding importers reported selling or purchasing both U.S.-produced wind towers and wind towers imported from subject countries on a delivered basis.

Two U.S. producers reported no discount policy, one reported quantity discounts, two reported prompt payment discounts, and one reported a "financial discount." All responding importer/purchasers reported no discounts on their purchases of U.S.-produced wind towers or on their purchases of wind towers imported from subject countries.

Price leadership

No purchasers reported any price leaders in the U.S. wind towers market.

[21] ***.

Price and purchase cost 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 wind towers products shipped to unrelated U.S. customers during 2018-20.

Product 1.-- Wind towers, more than 80 meters but less than or equal to 90 meters in height.

Product 2.-- Wind towers, more than 90 meters but less than or equal to 100 meters in height.

Product 3.-- Wind towers, more than 100 meters but less than or equal to 110 meters in height.

Product 4.— Wind towers, more than 110 meters but less than or equal to 120 meters in height.

Price data and import purchase cost data[22]

Five U.S. producers provided usable pricing data for sales of the requested products and three importers[23] provided usable purchase cost data, although not all firms reported pricing or purchase costs for all products for all quarters.[24] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' shipments of wind towers in 2020. Purchase cost data accounted for *** percent of imports from India, *** percent of imports from

[22] The Commission collected purchase cost data for imports rather than price data because ***. Therefore, in order to have comparable data for all subject countries, purchase cost data was collected from all importers.

[23] ***. *** did not import wind towers from subject countries.

[24] Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importer/purchasers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer/purchaser estimates.

Malaysia,[25] and *** percent of imports from Spain in 2020. Landed-duty paid purchase cost data for imports from India, Malaysia, and Spain, where available, are presented in tables V-3 to V-6, along with U.S. producers' sales prices.[26] [27] [28]

Importers reporting import purchase cost data were asked to provide additional information regarding the costs and benefits of importing wind towers themselves.

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[25] ***.

[26] LDP import value does not include any potential additional costs that a purchaser may incur by importing rather than purchasing from another importer or U.S. producer. Price-cost differentials are based on LDP import values whereas margins of underselling/overselling are based on importer sales prices. ***.

[27] ***.

[28] ***.

None of the importers reported that they incurred additional costs beyond landed duty-paid costs by importing wind towers directly rather than purchasing from a U.S. producer or U.S. importer. *** reported that it compares costs of importing to both the cost of purchasing from a U.S. producer and the cost of purchasing from an importer in determining whether to import wind towers. *** reported that they did not compare costs of purchasing from either U.S. producers or importers. *** identified availability as a benefit from importing wind towers directly instead of purchasing from U.S. producers or importer.

Importers were also asked whether the import cost (both excluding and including additional costs) of wind towers they imported are lower than the price of purchasing wind towers from a U.S. producer or importer. Only (***) responded, reporting that their imports were not less expensive than if the firm purchased from an importer or U.S. producer.

Additionally, purchasers were asked to provide data on their largest purchasing events. These data are summarized in appendix H.

Table V-3
Wind towers: Weighted-average f.o.b. prices, LDP purchase costs and quantities of domestic and imported product 1 and price-cost differentials, by quarter

Price and LDP value in dollars per unit, quantity in units, price-cost differences in percent.

Period	US price	US quantity	India LDP value	India quantity	India price-cost differential	Malaysia LDP value	Malaysia quantity	Malaysia price-cost differential
2018 Q1	***	***	***	***	***	***	***	***
2018 Q2	338,598	347	***	***	***	***	***	***
2018 Q3	347,232	382	***	***	***	***	***	***
2018 Q4	341,118	304	***	***	***	***	***	***
2019 Q1	355,703	452	***	***	***	***	***	***
2019 Q2	353,048	382	***	***	***	***	***	***
2019 Q3	348,753	258	***	***	***	***	***	***
2019 Q4	335,288	412	***	***	***	***	***	***
2020 Q1	330,783	364	***	***	***	***	***	***
2020 Q2	344,594	398	***	***	***	***	***	***
2020 Q3	343,487	448	***	***	***	***	***	***
2020 Q4	345,397	357	***	***	***	***	***	***

Table continued.

Table V-3 Continued
Wind towers: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarter

Period	Spain LDP value	Spain quantity	Spain price-cost differential
2018 Q1	***	***	***
2018 Q2	***	***	***
2018 Q3	***	***	***
2018 Q4	***	***	***
2019 Q1	***	***	***
2019 Q2	***	***	***
2019 Q3	***	***	***
2019 Q4	***	***	***
2020 Q1	***	***	***
2020 Q2	***	***	***
2020 Q3	***	***	***
2020 Q4	***	***	***

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

Note: Product 1: Wind towers, more than 80 meters but less than or equal to 90 meters in height.

Figure V-2
Wind towers: Weighted-average prices, LDP purchase costs, and quantities of domestic and imported product 1, by quarter

Price/purchase cost of product 1

* * * * * * *

Volume of product 1

* * * * * * *

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

Note: Product 1: Wind towers, more than 80 meters but less than or equal to 90 meters in height.

Table V-4
Wind towers: Weighted-average f.o.b. prices, LDP purchase costs, and quantities of domestic and imported product 2 and price-cost differentials, by quarter

Price and LDP value in dollars per unit, quantity in units, price-cost differences in percent.

Period	US price	US quantity	India LDP value	India quantity	India price-cost differential	Malaysia LDP value	Malaysia quantity	Malaysia price-cost differential
2018 Q1	***	***	***	***	***	***	***	***
2018 Q2	***	***	***	***	***	***	***	***
2018 Q3	***	***	***	***	***	***	***	***
2018 Q4	***	***	***	***	***	***	***	***
2019 Q1	***	***	***	***	***	***	***	***
2019 Q2	***	***	***	***	***	***	***	***
2019 Q3	***	***	***	***	***	***	***	***
2019 Q4	***	***	***	***	***	***	***	***
2020 Q1	***	***	***	***	***	***	***	***
2020 Q2	***	***	***	***	***	***	***	***
2020 Q3	***	***	***	***	***	***	***	***
2020 Q4	***	***	***	***	***	***	***	***

Table continued

Table V-4 Continued
Wind towers: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarter

Period	Spain LDP value	Spain quantity	Spain price-cost differential
2018 Q1	***	***	***
2018 Q2	***	***	***
2018 Q3	***	***	***
2018 Q4	***	***	***
2019 Q1	***	***	***
2019 Q2	***	***	***
2019 Q3	***	***	***
2019 Q4	***	***	***
2020 Q1	***	***	***
2020 Q2	***	***	***
2020 Q3	***	***	***
2020 Q4	***	***	***

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

Note: Product 2: Wind towers, more than 90 meters but less than or equal to 100 meters in height.

Figure V-3
Wind towers: Weighted-average prices, LDP purchase costs, and quantities of domestic and imported product 2, by quarter

Price/purchase cost of product 2

* * * * * * *

Volume of product 2

* * * * * * *

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

Note: Product 2: Wind towers, more than 90 meters but less than or equal to 100 meters in height.

Table V-5
Wind towers: Weighted-average f.o.b. prices, LDP purchase costs, and quantities of domestic and imported product 3 and price-cost differentials, by quarter

Price and LDP value in dollars per unit, quantity in units, price-cost differences in percent.

Period	US price	US quantity	India LDP value	India quantity	India price-cost differential	Spain LDP value	Spain quantity	Spain price-cost differential
2018 Q1	***	***	***	***	***	***	***	***
2018 Q2	***	***	***	***	***	***	***	***
2018 Q3	***	***	***	***	***	***	***	***
2018 Q4	***	***	***	***	***	***	***	***
2019 Q1	***	***	***	***	***	***	***	***
2019 Q2	***	***	***	***	***	***	***	***
2019 Q3	***	***	***	***	***	***	***	***
2019 Q4	***	***	***	***	***	***	***	***
2020 Q1	***	***	***	***	***	***	***	***
2020 Q2	***	***	***	***	***	***	***	***
2020 Q3	***	***	***	***	***	***	***	***
2020 Q4	***	***	***	***	***	***	***	***

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

Note: Product 3: Wind towers, more than 100 meters but less than or equal to 110 meters in height.
Note: The U.S. sale in ***.

Figure V-4
Wind towers: Weighted-average prices, LDP purchase costs, and quantities of domestic and imported product 3, by quarter

Price/purchase cost of product 3

* * * * * * *

Volume of product 3

* * * * * * *

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

Note: Product 3: Wind towers, more than 100 meters but less than or equal to 110 meters in height.

Table V-6
Wind towers: Weighted-average f.o.b. prices, LDP purchase costs, and quantities of domestic and imported product 4 and price-cost differentials, by quarter

Price and LDP value in dollars per unit, quantity in units, price-cost differences in percent.

Period	US price	US quantity	India LDP value	India quantity	India price-cost differential	Malaysia LDP value	Malaysia quantity	Malaysia price-cost differential
2018 Q1	***	***	***	***	***	***	***	***
2018 Q2	***	***	***	***	***	***	***	***
2018 Q3	***	***	***	***	***	***	***	***
2018 Q4	***	***	***	***	***	***	***	***
2019 Q1	***	***	***	***	***	***	***	***
2019 Q2	***	***	***	***	***	***	***	***
2019 Q3	***	***	***	***	***	***	***	***
2019 Q4	***	***	***	***	***	***	***	***
2020 Q1	***	***	***	***	***	***	***	***
2020 Q2	***	***	***	***	***	***	***	***
2020 Q3	***	***	***	***	***	***	***	***
2020 Q4	***	***	***	***	***	***	***	***

Table continued

Table V-6 Continued
Wind towers: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by quarter

Period	Spain LDP value	Spain quantity	Spain price-cost differential
2018 Q1	***	***	***
2018 Q2	***	***	***
2018 Q3	***	***	***
2018 Q4	***	***	***
2019 Q1	***	***	***
2019 Q2	***	***	***
2019 Q3	***	***	***
2019 Q4	***	***	***
2020 Q1	***	***	***
2020 Q2	***	***	***
2020 Q3	***	***	***
2020 Q4	***	***	***

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

Note: Product 4: Wind towers, more than 110 meters but less than or equal to 120 meters in height.

Figure V-5
Wind towers: Weighted-average prices, LDP purchase costs, and quantities of domestic and imported product 4, by quarter

Price/purchase cost of product 4

*   *   *   *   *   *   *

Volume of product 4

*   *   *   *   *   *   *

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

Note: Product 4: Wind towers, more than 110 meters but less than or equal to 120 meters in height.

Price and purchase cost trends

Table V-7 summarizes price and purchase costs trends by country and by product. Domestically produced products *** prices were reported over the entire period. U.S.-produced product *** and product *** prices increased by *** and *** percent, respectively, during 2018-20. Table V-7 also reports price/purchase cost changes for which data were available in both 2018 and 2020. U.S. product 3 price decreased by *** percent between the third quarter of 2018 and the fourth quarter of 2020; Spanish product 1 purchase costs decreased by *** percent between the second quarter to 2018 and the third quarter of 2020; and Spanish product 2 purchase costs decreased by *** percent between the second quarter of 2018 and the third quarter of 2020.

Table V-7
Wind towers: Number of quarters containing observations, low and high f.o.b. price or import purchase cost, and change in price or purchase cost over period, by product and source

Product	Source	Number of quarters	Number of wind towers	Low price/ purchase cost (dollars per unit)	High price/ purchase cost (dollars per unit)	Percent change in price/ purchase cost over period
Product 1	United States	12	***	***	***	***
Product 1	India	1	***	***	***	---
Product 1	Malaysia	5	***	***	***	***
Product 1	Spain	4	***	***	***	***
Product 2	United States	9	***	***	***	***
Product 2	India	5	***	***	***	***
Product 2	Malaysia	4	***	***	***	***
Product 2	Spain	4	***	***	***	***
Product 3	United States	8	***	***	***	***
Product 3	India	5	***	***	***	***
Product 3	Malaysia	---	---	---	---	---
Product 3	Spain	6	***	***	***	***
Product 4	United States	3	***	***	***	***
Product 4	India	1	***	***	***	---
Product 4	Malaysia	1	***	***	***	---
Product 4	Spain	1	***	***	***	---

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

Note: Percentage change from the first quarter of 2018 to the last quarter in 2020.

Note: Price changes from the first and last quarter it was available (when prices were available for multiple quarters) were also calculated. Product 1 from Malaysia (*** available 5 quarters) increased *** percent and from Spain (*** available 4 quarters) decreased *** percent. Product 2 from India (*** available 5 quarters) decreased *** percent, from Malaysia (*** available 4 quarters) decreased *** percent, and from Spain (*** available 4 quarters) decreased *** percent. Product 3 from the United States (*** available 8 quarters) decreased *** percent, from India (*** available 5 quarters) decreased *** percent, and from Spain (*** available 6 quarters) decreased *** percent. Product 4 from the United States (*** available 3 quarters) increased by *** percent.

Price and purchase cost comparisons

As shown in tables V-8 and V-9, landed duty-paid costs for wind towers imported from India were below the sales price for U.S.-produced products in *** instances (*** units) and above in *** instance (*** units); those from Malaysia were below the sales price for U.S.-produced product in *** instances (*** units) and above in *** instance (*** units); and those from Spain were lower in *** instances (*** units) and above in *** instances (*** units). Price-cost differentials ranged from *** percent below and *** percent above for India, *** percent below and *** percent above for Malaysia, and *** percent below and *** percent above for Spain.

Table V-8
Wind towers: Instances of lower average unit purchase cost compared to U.S. price and the range and average price-cost differentials, by product and by country, 2018-20

Quantity in units; margin in percent

Source	Number of quarters	Quantity	Average price-cost differential	Min price-cost differential	Max price-cost differential
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, lower	20	799	20.2	2.1	39.9
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Total, lower	20	799	20.2	2.1	39.9

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

Table V-9
Wind towers: Instances of higher average unit purchase cost compared to U.S. price and the range and average price/cost differentials, by product and by country, 2018-20

Quantity in units; margin in percent

Source	Number of quarters	Quantity	Average price-cost differential	Min price-cost differential	Max price-cost differential
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, higher	7	105	(32.1)	(2.9)	(83.8)
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Total, higher	7	105	(32.1)	(2.9)	(83.8)

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

Lost sales and lost revenue

In the preliminary phase of these investigations, the Commission requested that U.S. producers of wind towers report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of wind towers from India, Malaysia, and Spain during January 2017 through June 2020. Two U.S. producers submitted lost sales and lost revenue allegations and identified 10 firms with which they lost sales or revenue (5 consisting of lost sales allegations and 5 consisting of both types of allegations).[29] Only one lost sale/lost revenue allegation identified the country source (Spain). Lost sales or lost revenue were alleged during February 2017 through September 2020.

[29] This excludes an allegation for a purchaser for which no email contact information was provided. In some of these allegations, purchasers were reported to have rejected the bids because of price, but the U.S. producer did not clearly allege that the firm had purchased imported wind towers instead of U.S. produced wind towers. These firms were sent lost sales/lost revenue surveys.

In the final phase of these investigations, of the six responding U.S. producers, five reported that they had to either reduce prices or roll back announced price increases, and five firms reported that they had lost sales. ***.

Staff contacted 11 importer/purchasers and received responses from seven firms, of which five were purchasers.[30] These five responding purchasers reported purchasing *** wind towers during 2018-20 (table V-10). Three purchasers reported both that their share of purchases or internal consumption of domestic wind towers decreased and that their shares of purchases or imports of wind towers from subject counties increased.

Table V-10
Wind towers: Purchasers' reported purchases and imports 2018-20

Quantity in units, share in percent

Purchaser	Domestic quantity	Subject quantity	Nonsubject quantity	Change in domestic share	Change in subject country share
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	***	***	***	***	***

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

Note: 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.

Of the five responding purchasers, four reported that, since 2018, they had purchased imported wind towers from subject countries instead of U.S.-produced product (one from India, three from Malaysia, and two from Spain) (table V-11). Three of these purchasers reported that subject import prices were lower than U.S.-produced product, but none of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. As a result no purchaser estimated the quantity of subject imports they purchased instead of U.S.-produced product. Instead, these three purchasers reported purchasing imports because of import available capacity, qualification of the supplier, and the location of the project.

[30] *** submitted importer/purchaser questionnaires because they were importers, but they were not purchasers.

Table V-11
Wind towers: Purchasers' responses to purchasing subject imports instead of domestic product

Quantity in units

Purchaser	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes--4; No—1	Yes--3; No--1	Yes--0; No--3	***	NA

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

Note. ***.

None of the responding purchasers reported that U.S. producers had reduced prices in order to compete with lower-priced imports from subject countries; two reported that U.S. producers had not reduced prices and three reported that they did not know.

In responding to the lost sales lost revenue survey, some purchasers provided additional information on purchases and market dynamics. Purchaser *** reported that the shift to larger towers has benefited U.S. producers because logistics becomes more important with larger wind towers, and the U.S. product has the advantage in logistics. In addition, it stated that larger towers reduce the importance of the U.S. producers' capacity constraints because fewer tower sections are required for the same amount of power. It also reported that ***.

Part VI: Financial experience of U.S. producers

Background

Six U.S. producers (Arcosa, Broadwind, GRI Towers, Marmen, Ventower, and Vestas) reported financial results on their wind tower operations.[1] [2] As a share of total wind tower sales value in 2020, *** accounted for the largest company-specific shares (*** percent and *** percent, respectively), followed by *** (*** percent), *** (*** percent), *** (*** percent) and *** (*** percent).

As discussed in Part III of this report, U.S. producers undertook a variety of actions/initiatives related to their wind tower operations during the period examined (2018 through 2020).[3] [4] U.S. producers' narrative descriptions regarding the impact of COVID-19 on their financial results are presented in the *Cost of goods sold and gross profit or loss* section below.

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[1] Arcosa, Broadwind, and Vestas are publicly-traded companies. GRI Towers, Marmen, and Ventower are privately held. Vestas is the only U.S. producer that is vertically integrated with respect to its wind tower production and overall wind energy operations. With the exception of ***, which specified IFRS (International Financial Reporting Standards) as its accounting basis, U.S. producers reported their wind tower financial results based on GAAP (Generally Accepted Accounting Principles). All U.S. producers reported their annual financial results for calendar-year periods. ***. Email with attachments from *** to USITC staff, May 13, 2021. USITC auditor notes (prehearing).

[2] U.S. producers indicated that wind towers represent all or the substantial majority of relevant establishment operations. U.S. producers' questionnaires, responses to III-5.

[3] On November 1, 2018, the wind tower operations of Trinity, along with several other business units of that company, were spun off as part of a corporate restructuring to form Arcosa, a new, publicly traded company. Arcosa 2018 10-K, p. 3. Arcosa's relevant wind tower operations and activity were not impacted by the spin-off from Trinity. Conference transcript, p. 82 (Bourland).

[4] In 2019, Broadwind announced a number of strategic objectives for the company as a whole, including increased diversification of its customer base and overall product line. Broadwind 2019 10-K, pp. 5-6. Broadwind's product and customer diversification initiatives reportedly did not impact its wind tower operations. Conference transcript, p. 82 (Blashford).

Operations on wind towers

Table VI-1 presents wind tower financial results. Changes in average per tower values on a percentage basis and on a unit basis are presented in table VI-2.[5] [6] Company-specific financial information is presented in Appendix J.

Table VI-1
Wind towers: Results of operations of U.S. producers, by item and period

Quantity in towers; value in 1,000 of dollars

Item	Measure	2018	2019	2020
Commercial sales	Quantity	***	***	***
Transfers	Quantity	***	***	***
Total net sales	Quantity	2,698	2,964	2,744
Commercial sales	Value	***	***	***
Transfers	Value	***	***	***
Total net sales	Value	858,373	995,106	954,041
Cost of steel plate	Value	360,497	420,930	439,053
Cost of flanges	Value	42,208	57,612	57,555
Other raw material costs	Value	155,828	179,763	155,468
Total raw material costs	Value	558,533	658,305	652,076
Direct labor costs	Value	98,580	112,036	106,577
Other factory costs	Value	131,594	134,240	123,467
Cost of goods sold	Value	788,707	904,581	882,120
Gross profit or (loss)	Value	69,666	90,525	71,921
SG&A expenses	Value	25,339	28,142	29,161
Operating income or (loss)	Value	44,327	62,383	42,760
Interest expense	Value	***	***	***
Other expenses	Value	***	***	***
Other income items	Value	***	***	***
Net income or (loss)	Value	50,272	57,087	44,387
Depreciation/amortization	Value	41,460	39,420	28,018
Estimated cash flow from operations	Value	91,732	96,507	72,405

Table continued on next page.

[5] Merchant market financial results (i.e., ***) are presented in Appendix C and Appendix J.

[6] The U.S. industry's average per tower sales value reflects changes in product mix. Because its utility under these circumstances appears limited, a variance analysis is not presented.

Table VI-1 Continued
Wind towers: Results of operations of U.S. producers, by item and period

Ratios in percent and represent ratio to net sales value; shares in percent and represent share of cost of goods sold; unit values in dollars per tower; count in number of firms reporting

Item	Measure	2018	2019	2020
Cost of steel plate	Ratio	42.0	42.3	46.0
Cost of flanges	Ratio	4.9	5.8	6.0
Other raw material costs	Ratio	18.2	18.1	16.3
Total raw material costs	Ratio	65.1	66.2	68.3
Direct labor costs	Ratio	11.5	11.3	11.2
Other factory costs	Ratio	15.3	13.5	12.9
Cost of goods sold	Ratio	91.9	90.9	92.5
Gross profit	Ratio	8.1	9.1	7.5
SG&A expense	Ratio	3.0	2.8	3.1
Operating income or (loss)	Ratio	5.2	6.3	4.5
Net income or (loss)	Ratio	5.9	5.7	4.7
Cost of steel plate	Share	45.7	46.5	49.8
Cost of flanges	Share	5.4	6.4	6.5
Other raw material costs	Share	19.8	19.9	17.6
Total raw material costs	Share	70.8	72.8	73.9
Direct labor costs	Share	12.5	12.4	12.1
Other factory costs	Share	16.7	14.8	14.0
Cost of goods sold	Share	100.0	100.0	100.0
Commercial sales	Unit value	***	***	***
Transfers	Unit value	***	***	***
Total net sales	Unit value	318,152	335,731	347,683
Cost of steel plate	Unit value	133,616	142,014	160,005
Cost of flanges	Unit value	15,644	19,437	20,975
Other raw material costs	Unit value	57,757	60,649	56,657
Total raw material costs	Unit value	207,017	222,100	237,637
Direct labor costs	Unit value	36,538	37,799	38,840
Other factory costs	Unit value	48,775	45,290	44,995
Cost of goods sold	Unit value	292,330	305,189	321,472
Gross profit or (loss)	Unit value	25,821	30,541	26,210
SG&A expenses	Unit value	9,392	9,495	10,627
Operating income or (loss)	Unit value	16,430	21,047	15,583
Net income or (loss)	Unit value	18,633	19,260	16,176
Operating losses	Count	3	2	2
Net losses	Count	3	1	2
Data	Count	6	6	6

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

Table VI-2
Wind towers: Changes in average per tower values, between comparison periods

Change in percent

Item	2018-20	2018-19	2019-20
Commercial sales	***	***	***
Transfers	***	***	***
Total net sales	▲9.3	▲5.5	▲3.6
Cost of steel plate	▲19.7	▲6.3	▲12.7
Cost of flanges	▲34.1	▲24.2	▲7.9
Other raw material costs	▼(1.9)	▲5.0	▼(6.6)
Total raw material costs	▲14.8	▲7.3	▲7.0
Direct labor costs	▲6.3	▲3.5	▲2.8
Other factory costs	▼(7.7)	▼(7.1)	▼(0.7)
Cost of goods sold	▲10.0	▲4.4	▲5.3

Table continued.

Table VI-2 Continued
Wind towers: Changes in average per tower values, between comparison periods

Change in dollars per tower

Item	2018-20	2018-19	2019-20
Commercial sales	***	***	***
Transfers	***	***	***
Total net sales	▲29,531	▲17,579	▲11,952
Cost of steel plate	▲26,388	▲8,398	▲17,991
Cost of flanges	▲5,331	▲3,793	▲1,538
Other raw material costs	▼(1,099)	▲2,892	▼(3,991)
Total raw material costs	▲30,620	▲15,083	▲15,537
Direct labor costs	▲2,302	▲1,261	▲1,041
Other factory costs	▼(3,779)	▼(3,484)	▼(295)
Cost of goods sold	▲29,142	▲12,859	▲16,283
Gross profit or (loss)	▲389	▲4,720	▼(4,331)
SG&A expense	▲1,235	▲103	▲1,133
Operating income or (loss)	▼(846)	▲4,617	▼(5,464)
Net income or (loss)	▼(2,457)	▲627	▼(3,084)

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

Revenue

In 2020, commercial sales and transfer sales to related firms accounted for *** percent and *** percent of total wind tower sales value, respectively. ***.[7]

Quantity

The U.S. industry's total sales quantity increased in 2019 and declined in 2020. On a company-specific basis, *** U.S. producers reported higher sales quantity in 2019 of varying magnitudes, while *** U.S. producers reported declines in 2020.[8] As noted below, the pattern of company-specific sales quantity was impacted to some extent by changes in underlying product mix.

Value

U.S. producers vary in terms of how underlying sales values are determined and whether a negotiated "conversion price" is directly relevant; i.e., pass through of primary material costs, in varying degrees and pursuant to customer-specific arrangements, can take place with or without a formal conversion price contract. Broadwind, for example, negotiates conversion contracts in which raw material costs are passed through and only the conversion price is negotiated.[9] Referring to the pass-through nature of raw material costs, an Arcosa company official stated ". . . the negotiations focus on the conversion portion of the tower price. Essentially, it is the only portion of the price that we can control."[10] ***

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[7] *** U.S. producer questionnaire, response to II-11. ***. Email with attachments from *** on behalf of *** to USITC staff, October 28, 2020.

[8] ***.

[9] As described by Broadwind, "The conversion price, which is the only thing we can negotiate, includes the labor to build and assemble the tower, as well as paint and welding consumables for us. Increasingly, however, we are even seeing paint included in the directed buy." Conference transcript, p. 12 (Blashford).

[10] Conference transcript, p. 22 (Bourland).

***.[11] *** indicated that they generally do not formally negotiate separate conversion price contracts.[12]

As shown in table VI-2, while commercial sales value and transfer values both increased throughout the period, corresponding magnitudes varied. Most U.S. producers indicated that there were some variations in product mix during the period, reflecting changes in tower height/weight and/or configurations sold.[13] *** indicated that product mix did not change substantially during the period examined.[14]

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[11] *** U.S. producer questionnaire, response to III-4.E.

[12] Email with attachments from ***, to USITC staff, October 26, 2020. Email with attachments from *** on behalf of *** to USITC staff, October 28, 2020. ***. Email with attachment from *** on behalf of *** to USITC staff, October 28, 2020. As further noted by ***. *** U.S. producer questionnaire, response to III-4.E.

[13] ***. Email with attachment from *** on behalf of *** to USITC staff, May 12, 2021. ***. Email from *** to USITC staff, May 11, 2021. ***. Email with attachments from *** to USITC staff, May 10, 2021.

[14] ***. Email with attachment from *** on behalf of *** to USITC staff, May 12, 2021. ***. Email from *** to USITC staff, May 12, 2021.

Cost of goods sold and gross profit or loss

Raw materials

Total raw material cost accounts for the single largest component of wind tower cost of goods sold (COGS), ranging from 70.8 percent of total COGS (2018) to 73.9 percent (2020).[15] Steel plate, the largest subcategory of raw material cost, ranged from 45.7 percent of COGS (2018) to 49.8 percent (2020),[16] followed by other raw material costs, ranging from 17.6 percent of total COGS (2020) to 19.9 percent (2019).[17] Flanges ranged from 5.4 percent of total COGS (2018) to 6.5 percent (2020).

In conjunction with differences in company-specific product mix, raw material costs reflect different arrangements in which U.S. producers or their customers, in varying degrees, are responsible for raw material sourcing, as well as the extent to which raw material costs are passed through to the customer. As described by a Broadwind company official, "Most OEMs have conversion contracts or some sort of pass-through mechanism for tower purchases. The raw material costs are passed through to the OEM. For the vast majority of Broadwind's sales, we have conversion contracts . . . these are directed buys. The OEM tells us exactly who to purchase the materials from and at what price, including the steel, internals, door frames, and

[15] *** reported purchasing material inputs from related suppliers. ***. *** U.S. producer questionnaire, response to III-7. ***. Email with attachment from *** on behalf of *** to USITC staff, May 12, 2021. ***. *** U.S. producer questionnaire, response to III-7.

[16] In narrative accompanying its 2020 public financial statements, Arcosa stated "The principal material used in our Engineered Structures segment {the segment including wind tower operations} is steel. During 2020, the supply of steel was sufficient to support our manufacturing requirements. Market steel prices continue to exhibit periods of volatility and ended 2020 significantly higher than 2019 . . . We often use contract-specific purchasing practices, existing supplier commitments, contractual price escalation provisions, and other arrangements with our customers to mitigate the effect of steel price volatility on our operating profit for the year." Arcosa 2020 10-K, p. 7.

[17] ***. Submission by *** on behalf of ***, October 28, 2020.

flanges."[18] Similarly, an Arcosa company official stated "While from OEM to OEM the pricing formulas may be slightly different, the sales contracts typically establish a pass-through pricing formula for the steel raw materials. Often, OEMs either direct us to purchase steel from specific suppliers at predetermined prices or require us to negotiate with a select group of predetermined suppliers. This directed sourcing often applies to other components now as well, such as internals."[19]

***.[20] ***.[21]

Marmen stated that its procurement process varies by customer and has changed to some extent during the period in terms of the scope of inputs for which it is responsible: ***

[18] Conference transcript, p. 12 (Blashford). In narrative accompanying its 2020 public financial statements, Broadwind stated "The primary raw material used in the construction of heavy fabrication and gearing products is steel in the form of plate, bar stock, forgings and castings. The market for tower steel and internal packages has become increasingly globalized. Although we are generally responsible for procurement of the raw materials, our global tower customers often negotiate the prices and terms for purchases, and, through a "directed buy," we purchase under these agreements. We then pass the raw material cost through to our end customer plus a conversion margin." Broadwind 2020 10-K, p. 9.

[19] Conference transcript, p. 22 (Bourland). ***. *** U.S. producer questionnaire, response to III-4.E.

[20] *** U.S. producer questionnaire, response to III-4.B.

[21] *** U.S. producer questionnaire, responses to III-4.B and III-4.C.

***.[22]

***.[23]

While average total raw material cost increased on a percentage basis by similar magnitudes in 2019 and 2020 (see table VI-2), underlying raw material components reflect somewhat different patterns; e.g., the more notable increases in average flange cost and average steel plate cost taking place in different years (2019 and 2020, respectively). As shown in table J-1, *** reported relatively large increases in average steel

[22] *** U.S. producer questionnaire, response to III.4.B. ***. *** U.S. producer questionnaire, response to III.4.C.

[23] *** U.S. producer questionnaire, responses to III-4.B and III-4.C.

plate cost in 2020,[24] while the other U.S. producers reported declines.[25] On a company-specific basis, directional changes in average other raw materials cost and flanges were similar between 2018 and 2019 (primarily increasing) and then diverged between 2019 and 2020 with changes in company-specific average flange costs mixed (increasing and decreasing), while average other raw material costs primarily decreased (see table J-1).[26]

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[24] ***. Email from *** to USITC staff, May 11, 2021. Arcosa reported that it entered into long-term steel supply agreements prior to the 232 tariffs, which in turn mitigated cost increases passed through to end customers during part of the full-year period. USITC Publication 5101, p. VI-19, n. 23. ***. Email with attachment from *** on behalf of *** to USITC staff, May 12, 2021. ***.

[25] ***. Email with attachment from *** on behalf of *** to USITC staff, May 12, 2021. ***. Email from *** to USITC staff, May 12, 2021.

[26] ***. Email from *** to USITC staff, May 11, 2021.

Direct labor and other factory costs

Activity associated with converting raw material into finished wind towers, inclusive of initial and secondary material preparation, includes can fabrication, flange attachment, internal component assembly, and coating application.[27] While fluctuating somewhat, direct labor and other factory costs as a share of total COGS were in similar ranges throughout the period: direct labor cost as a share of total COGS ranging from 12.1 percent (2020) to 12.5 percent (2018) and other factory costs ranging from 14.0 percent (2020) to 16.7 percent (2018).

U.S. producers reported a mixed directional pattern of average direct labor and other factory costs (see table J-1). In addition to factors such as model changes, the relative shares of direct labor and other factory costs to total COGS can also reflect changes in production volume

[27] USITC Publication 5101, p. VI-22. Conference transcript, pp. 67-68 (Blashford). ***. Petitioner's postconference brief, Exhibit 24.

and corresponding capacity utilization.[28] [29] Changes in the shares of direct labor and other factory costs to total COGS can also reflect changes in product mix.[30]

Gross profit or loss

U.S. producers reported a relatively wide range of gross profit or loss ratios (total gross profit or loss divided by total sales) during the period. *** reported the highest company-specific gross profit ratios in 2018 and 2019, while *** reported the highest company-

[28] USITC Publication 5101, p. VI-22. ***. Email from *** on behalf of *** to USITC staff, May 13, 2021. ***. Ibid. ***. Email from *** to USITC staff, May 12, 2021.

[29] ***. Email with attachments from ***, to USITC staff, October 26, 2020. ***. Email with attachments from ***, to USITC staff, May 11, 2021.

[30] ***. Email with attachment from *** on behalf of *** to USITC staff, May 12, 2021. ***. Email from *** to USITC staff, May 11, 2021.

specific gross profit ratio in 2020.[31] [32] In 2019 and 2020, *** transitioned to gross profit, respectively.[33] [34] *** gross profit ratio, having increased

[31] ***. Email from *** on behalf of *** to USITC staff, May 12, 2021. ***. *** U.S. producer questionnaire, response to III-9c.

[32] ***. *** U.S. producer questionnaire, response to question III-9c.

[33] ***. Email with attachment from *** on behalf of *** to USITC staff, May 12, 2021. In narrative accompanying its 2020 public financial statements, Broadwind stated that the company's overall increase in gross profit in 2020 reflects improved capacity utilization in its Heavy Fabrications segment {which includes wind tower operations}, noting "Higher {2020} capacity utilization in the Heavy Fabrications segment was driven primarily by an expansion of our customer base and an increase in wind tower deliveries to support industry-wide installation growth in the current year." Broadwind 2020 10-K, p. 23. ***. *** U.S. producer questionnaire response to III-9c.

[34] ***. Email with attachments from ***, to USITC staff, May 11, 2021. ***. *** U.S. producer questionnaire, response to question III-9c.

from the level reported in 2018, remained in a similar range in 2019 and 2020.[35] Between 2018 and 2019 *** gross profit ratios increased and in 2020 transitioned to a gross loss.[36]

The U.S. industry's total gross profit reached its highest level (on an absolute basis and as a ratio of sales) in 2019, reflecting an increase in total sales value that more than offset the corresponding increase in total COGS. In 2020, total gross profit declined somewhat in conjunction with a decline in total sales value that was partially offset by a corresponding decline in total COGS.[37]

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[35] ***. *** U.S. producer questionnaire, response to question III-9c.

[36] ***. Email with attachments from *** to USITC staff, October 26, 2020. ***. Email with attachments from *** to USITC staff, May 10, 2021. ***. Ibid. ***. Email with attachments from *** to USITC staff, May 14, 2021. ***. *** U.S. producer questionnaire, response to question III-9c.

[37] As calculated in table VI-1, raw material cost is reflected/recovered in total sales value and is included as a component of COGS. In contrast, sales value less raw material cost ("effective conversion price") removes the direct impact of raw material cost. Total effective conversion price and corresponding conversion costs (combined direct labor and other factory costs) increased to their highest levels in 2019 and then declined somewhat in 2020. As a ratio of effective conversion price, the difference between effective conversion price and corresponding conversion cost was 23.2 percent (2018), 26.9 percent (2019), and 23.8 percent (2020).

SG&A expenses and operating income or loss

While the U.S. industry's total selling, general, and administrative (SG&A) expenses increased throughout the period, corresponding SG&A expense ratios (total SG&A expenses divided by total sales) fluctuated, declining to their lowest level in 2019, but remaining within a relatively narrow range. As such, the level and pattern of SG&A expenses, in general, played a secondary role in terms of explaining the pattern of operating results.

Interest expense, other expenses and income, and net income or loss

*** U.S. producers except *** reported some level of interest expense during the period examined with *** accounting for the largest company-specific share. *** accounted for the majority of other income reported during the period.[38] While *** U.S. producers reported other expenses of varying magnitudes, *** accounted for the largest company-specific share.

While magnitudes of change differed, both operating income and net income followed the same pattern during the period: increasing in 2019 and declining in 2020.

Capital expenditures and research and development expenses

Table VI-3 and table VI-4 present the U.S. producers' total capital expenditures and each firm's narrative description, respectively, related to wind tower operations. Table VI-5 and table VI-6 present total research and development (R&D) expenses and each firm's narrative description.

Table VI-3
Wind towers: U.S. producers' capital expenditures, by period

Value in 1,000 dollars

Firm	2018	2019	2020
All firms	26,707	17,312	16,969

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

[38] ***. Email from *** on behalf of *** to USITC staff, October 28, 2020. ***.

Table VI-4
Wind towers: Narrative description of U.S. producers' capital expenditures, by firm

Firm	Narrative
Arcosa	***
Broadwind	***
GRI Towers	***
Marmen	***
Ventower	***
Vestas	***

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

Table VI-5
Wind towers: U.S. producers' R&D expenses, by period

Values in 1,000 dollars

Firm	2018	2019	2020
All firms	***	***	***

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

Table VI-6
Wind towers: Narrative description of U.S. producers' R&D expenses, by firm

Firm	Narrative
Arcosa	***
Broadwind	***
GRI Towers	***
Marmen	***
Ventower	***
Vestas	***

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

Assets and return on assets

Table VI-7 and table VI-8 present data on the U.S. producers' total assets and corresponding return on assets (ROA), respectively.[39]

Table VI-7
Wind towers: U.S. producers' total net assets, by period

Value in 1,000 dollars

Firm	2018	2019	2020
All firms	433,347	335,123	342,148

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

Table VI-8
Wind towers: U.S. producers' ROA, by period

Ratio in percent

Firm	2018	2019	2020
All firms	10.2	18.6	12.5

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

Capital and investment

The Commission requested U.S. producers of wind towers to describe any actual or potential negative effects of imports of wind towers from India, Malaysia, and Spain on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-9 presents the number of firms reporting an impact in each category and table VI-10 provides the U.S. producers' firm-specific narrative responses.

[39] 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. While high-level allocations are often required in order to report a total asset amount on a product-specific basis, relevant U.S. producer facilities are generally focused on the production of wind towers, which would generally reduce the need for high-level allocations to report product-specific total assets.

Table VI-9
Wind towers: Count of firms indicating actual and anticipated negative effects as a result of imports from subject sources on investment, growth, and development since January 1, 2018, by effect

Effect	Category	Count
Any negative effects on investment	Investment	5
Cancellation, postponement, or rejection of expansion projects	Investment	2
Denial or rejection of investment proposal	Investment	1
Reduction in the size of capital investments	Investment	3
Return on specific investments negatively impacted	Investment	4
Other growth and development effects	Investment	2
Any negative effects on growth and development	Growth	4
Rejection of bank loans	Growth	2
Lowering of credit rating	Growth	3
Problem related to the issue of stocks or bonds	Growth	1
Ability to service debt	Growth	3
Other investment effects	Growth	1
Anticipated negative effects of imports	Future	5

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

Note.--***.

Table VI-10
Wind towers: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2018

Item	Firm name and accompanying narrative response
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	***

Table continued on next page.

Table VI-10 Continued
Wind towers: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2018

Item	Firm name and accompanying narrative response
Reduction in the size of capital investments	***
Reduction in the size of capital investments	***
Return on specific investments negatively impacted	***
Return on specific investments negatively impacted	***
Return on specific investments negatively impacted	***
Return on specific investments negatively impacted	***
Other negative impact on investment	***
Other negative impact on investment	***
Rejection of bank loans	***
Rejection of bank loans	***

Table continued on next page.

Table VI-10 Continued
Wind towers: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2018

Item	Firm name and accompanying narrative response
Lowering of credit rating	***
Lowering of credit rating	***
Lowering of credit rating	***
Problem related to the issue of stocks or bonds	***
Ability to service debt	***
Ability to service debt	***
Ability to service debt	***
Other negative impact on growth and development	***
Anticipated effects of imports	***
Anticipated effects of imports	***

Table continued on next page.

Table VI-10 Continued
Wind towers: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2018

Item	Firm name and accompanying narrative response
Anticipated effects of imports	***
Anticipated effects of imports	***
Anticipated effects of imports	***

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

Part VII: 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 subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V*; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in *Part VI*. 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."

The industry in India

The Commission issued foreign producers' or exporters' questionnaires to four firms believed to produce and/or export wind towers from India.[3] Usable responses to the Commission's questionnaire were received from three firms: Anand Engineering Products Private Limited ("Anand Engineering"), GRI Towers India Private Limited ("GRI Towers India"), and Windar Renewable Energy Private Limited ("Windar Renewable India"). These firms' *** wind towers to the United States in 2020.[4] According to estimates requested of the responding producers in India, the production of wind towers in India reported in questionnaires accounts approximately *** of overall production of wind towers in India.[5] Table VII-I presents information on the wind towers operations of the responding producers and exporters in India.

[3] These firms were identified through a review of information submitted in the petition and presented in third-party sources.

[4] ***. Email from ***, May 11, 2021. Staff reached out to *** but was unable obtain a foreign producer/exporter questionnaire response.

[5] Indian producers' foreign producer questionnaire responses, section II-6a.

Table VII-1
Wind towers: Summary data for producers in India, 2020

Firm	Production (units)	Share of reported production (percent)	Exports to the United States (units)	Share of reported exports to the United States (percent)	Total shipments (units)	Share of firm's total shipments exported to the United States (percent)
Anand Engineering	***	***	***	***	***	***
GRI Towers India	***	***	***	***	***	***
Windar Renewable India	***	***	***	***	***	***
All firms	***	100.0	***	***	***	***

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

Note: In their preliminary phase questionnaire response *** reported exports to the United States. In their final phase questionnaire response ***. Email from ***, May 10, 2021.

Changes in operations

As presented in table VII-2 producers in India reported several operational and organizational changes since January 1, 2018.

Table VII-2
Wind towers: Reported changes in operations by producers in India, since January 1, 2018

Item	Firm name and accompanying narrative response
Plant openings	***
Prolonged shutdowns or curtailments	***
Prolonged shutdowns or curtailments	***
Prolonged shutdowns or curtailments	***
Other	***

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

Operations on wind towers

Table VII-3 presents information on the wind towers operations of the responding producers in India. During 2018-19, responding Indian producers' production capacity increased by *** percent, then decreased by *** percent from 2019 to 2020. Overall, during 2018-20, Indian producers' production capacity increased by *** percent. In 2019, *** opened a second wind towers production facility increasing their capacity by *** percent. *** capacity remained the same during 2018-19 and decreased by *** percent from 2019 to 2020. ***.[6] Indian producers projected their capacity to remain at the same level in 2021 and 2022 as in 2020, *** wind towers.

Indian producers' production increased by *** percent from 2018 to 2019, then decreased by *** percent from 2019 to 2020. Overall, during 2018-20, Indian producers' production increased by *** percent. The increase in production from 2018 to 2019 is largely driven by ***.[7] Indian producers projected production to decrease by *** percent (*** wind towers) from 2020 to 2021 and then increase by *** percent (*** wind towers) from 2021 to 2022.[8]

Table VII-3
Wind towers: Data on industry in India, by period

Quantity in units; ratio in percent

Item	2018	2019	2020	Projection 2021	Projection 2022
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 on next page.

[6] Email from ***, May 11, 2021.
[7] Email from ***, May 15, 2021.
[8] Indian producers projected ***. Indian producers' foreign producer questionnaire response, section II-7.

Table VII-3 Continued
Wind towers: Data on industry in India, by period

Shares and ratios in precent

Item	2018	2019	2020	Projection 2021	Projection 2022
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.

Note: In their preliminary phase questionnaire response ***. Email from ***, May 10, 2021.

As a result of ***, Indian producers' capacity utilization increased by *** percentage points from 2018 to 2019 and remained about the same in 2020.[9] Indian producers projected their capacity utilization to decrease by *** percentage points from 2020 to 2021, then increase by *** percentage points from 2021 to 2022.

Indian producers' commercial home market shipments fluctuated during 2018-20, but overall increased by *** percent. Throughout the period for which data were collected, *** responding Indian producers' shipments were to the ***.[10]

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[9] ***. Email from ***, May 15, 2021.

[10] ***. Indian producers reported producing *** wind towers in 2020. *** importer/purchaser questionnaire response, section II-5a; and Indian producers foreign producer/exporter questionnaire response, section II-8.

Alternative products

***.

Exports

Table VII-4 presents data for exports of tower and lattice masts of iron or steel (including wind towers) from India in descending order of value for 2020. The leading export markets for these towers and lattice masts from India, in terms of value, in 2020 were Bangladesh, Ethiopia, and Peru, accounting for 16.2 percent, 7.5 percent, and 7.5 percent, respectively. The United States accounted for 3.3 percent of all exports of these towers and lattice masts from India in 2020.

Table VII-4
Tower and lattice masts of iron or steel (including wind towers): Exports from India, by period

Value in 1,000 dollars; shares in percent

Destination market	Measure	2018	2019	2020
United States	Value	641	2,887	11,472
Bangladesh	Value	18,074	58,647	56,837
Ethiopia	Value	1,328	10,140	26,522
Peru	Value	13	27,157	26,456
Nepal	Value	19,939	25,380	23,082
Saudi Arabia	Value	1,415	6,602	21,609
Philippines	Value	13,190	7,847	18,588
Afghanistan	Value	30,246	40,267	17,156
Malaysia	Value	3,891	8,903	12,324
All other destination markets	Value	168,106	157,048	137,453
All destination markets	Value	256,844	344,878	351,498
United States	Share of value	0.2	0.8	3.3
Bangladesh	Share of value	7.0	17.0	16.2
Ethiopia	Share of value	0.5	2.9	7.5
Peru	Share of value	0.0	7.9	7.5
Nepal	Share of value	7.8	7.4	6.6
Saudi Arabia	Share of value	0.6	1.9	6.1
Philippines	Share of value	5.1	2.3	5.3
Afghanistan	Share of value	11.8	11.7	4.9
Malaysia	Share of value	1.5	2.6	3.5
All other destination markets	Share of value	65.5	45.5	39.1
All destination markets	Share of value	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 7308.20 as reported by Ministry of Commerce in the Global Trade Atlas database, accessed May 13, 2021.

Note: United States is shown at the top. All remaining top export destinations are shown in descending order of 2020 data.

The industry in Malaysia

The Commission issued a foreign producers' or exporters' questionnaire to one firm, CS Wind Malaysia Sdn Bhd ("CS Wind Malaysia"), believed to produce and/or export wind towers from Malaysia.[11] CS Wind Malaysia provided a usable response to the Commission's questionnaire. CS Wind Malaysia's exports to the United States accounted for *** U.S. imports of wind towers from Malaysia in 2020. According to estimates provided by CS Wind Malaysia, its production of wind towers in Malaysia accounts for *** production of wind towers in Malaysia. Table VII-5 presents information on CS Wind Malaysia's wind towers operations.

Table VII-5
Wind towers: Summary data for producer in Malaysia, 2020

Firm	Production (units)	Share of reported production (percent)	Exports to the United States (units)	Share of reported exports to the United States (percent)	Total shipments (units)	Share of firm's total shipments exported to the United States (percent)
CS Wind Malaysia	***	***	***	***	***	***
All firms	***	100.0	***	100.0	***	100.0

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

Changes in operations

As presented in table VII-6, CS Wind Malaysia reported an expansion and other operational and organizational changes since January 1, 2018.

Table VII-6
Wind towers: Reported changes in operations by Malaysian producer CS Wind Malaysia, since January 1, 2018

Item	Firm name and accompanying narrative response
Expansions	***
Other	***

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

[11] These firms were identified through a review of information submitted in the petition and presented in third-party sources.

Operations on wind towers

Table VII-7 presents information on CS Wind Malaysia's wind tower operations in Malaysia. CS Wind Malaysia's production capacity increased in each year during 2018-20, ending *** percent higher in 2020 than in 2018.[12] CS Wind Malaysia projected its capacity to *** from 2021 to 2022. CS Wind Malaysia's production increased by *** percent from 2018 to 2019 and by *** percent from 2019 to 2020, resulting in an overall increase of *** percent during 2018-20. Its production is projected to increase by *** percent in 2021 and remain the same in 2022.

Table VII-7
Wind towers: Data for Malaysian producer CS Wind Malaysia, by period

Quantity in units

Item	2018	2019	2020	Projection 2021	Projection 2022
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 on next page.

[12] ***. Email from ***, May 12, 2021.

Table VII-7 Continued
Wind towers: Data for Malaysian producer CS Wind Malaysia, by period

Shares and ratios in precent

Item	2018	2019	2020	Projection 2021	Projection 2022
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.

During 2018-19, CS Wind Malaysia's capacity utilization increased by *** percentage points, then decreased by *** percentage points from 2019 to 2020. Overall, during 2018-20, CS Wind Malaysia's capacity utilization increased by *** percentage points to *** percent in 2019. CS Wind Malaysia's capacity utilization is projected to increase by *** percentage points to *** percent in 2021 and *** in 2022.

During 2018-20, ***. CS Wind Malaysia reported export shipments in each year during 2018-20. In 2018, CS Wind Malaysia exported *** percent of its wind towers to the non-U.S. market.[13] In 2019 and 2020, *** percent and *** percent of export shipments were to U.S. market, respectively. In 2021 and 2022, CS Wind Malaysia projected *** percent of its shipments to be to the U.S. market and *** percent of its shipments to be to the non-U.S. market.

Alternative products

***.

[13] CS Wind Malaysia's reported *** as its principal non-U.S. export markets. CS Wind Malaysia's foreign producer questionnaire response, section II-8.

Exports

Table VII-8 presents data for exports of tower and lattice masts of iron or steel (including wind towers) from Malaysia in descending order of value for 2020. The leading export markets for these towers and lattice masts from Malaysia, in terms of value, in 2020 were the United States, Thailand, and Cambodia, accounting for 99.6 percent, 0.3 percent, and 0.1 percent, respectively.

Table VII-8
Tower and lattice masts of iron or steel (including wind towers): Exports from Malaysia, by period

Value in 1,000 dollars; shares in percent

Destination market	Measure	2018	2019	2020
United States	Value	281	28,890	146,791
Thailand	Value	---	685	397
Cambodia	Value	17	441	122
East Timor	Value	---	---	43
Philippines	Value	261	---	23
Australia	Value	57,081	9,127	18
Singapore	Value	269	2,912	7
Papua New Guinea	Value	4	73	2
Maldives	Value	---	54	1
All other destination markets	Value	2,585	1,431	0
All destination markets	Value	60,499	43,613	147,405
United States	Share of value	0.5	66.2	99.6
Thailand	Share of value	---	1.6	0.3
Cambodia	Share of value	0.0	1.0	0.1
East Timor	Share of value	---	---	0.0
Philippines	Share of value	0.4	---	0.0
Australia	Share of value	94.4	20.9	0.0
Singapore	Share of value	0.4	6.7	0.0
Papua New Guinea	Share of value	0.0	0.2	0.0
Maldives	Share of value	---	0.1	0.0
All other destination markets	Share of value	4.3	3.3	0.0
All destination markets	Share of value	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 7308.20 as reported by Department of Statistics Malaysia in the Global Trade Atlas database, accessed May 13, 2021.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2020 data.

The industry in Spain

The Commission issued foreign producers' or exporters' questionnaires to three firms believed to produce and/or export wind towers from Spain.[14] Usable responses to the Commission's questionnaire were received from two firms: GRI Renewable Industries ("GRI Renewable Spain") and Windar Renovables SL ("Windar Spain").[15] These firms' exports to the United States accounted for approximately *** percent of U.S. imports of wind towers from Spain in 2020. According to estimates requested of the responding producers in Spain, the production of wind towers in Spain reported in questionnaires accounts for over *** percent of overall production of wind towers in Spain.[16] Table VII-9 presents information on the wind towers operations of the responding producers and exporters in Spain.

Table VII-9
Wind towers: Summary data for producers in Spain, 2020

Firm	Production (units)	Share of reported production (percent)	Exports to the United States (units)	Share of reported exports to the United States (percent)	Total shipments (units)	Share of firm's total shipments exported to the United States (percent)
GRI Renewable Spain	***	***	***	***	***	***
Windar Spain	***	***	***	***	***	***
All firms	***	100.0	***	100.0	***	***

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

[14] These firms were identified through a review of information submitted in the petition and presented in third-party sources.

[15] Eiffage did not provide a foreign producer questionnaire response. ***. *** importer/purchaser questionnaire response, section II-7a.

[16] ***. *** foreign producer questionnaire response, section II-6a; and email from ***, May 12, 2021.

Changes in operations

As presented in table VII-10 producers in Spain reported several operational and organizational changes since January 1, 2018.

Table VII-10
Wind towers: Reported changes in operations by producers in Spain, since January 1, 2018

Item	Firm name and accompanying narrative response
Plant closings	***
Expansions	***
Prolonged shutdowns or curtailments	***
Other	***
Other	***

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

Operations on wind towers

Table VII-11 presents information on the wind towers operations of the responding producers and exporters in Spain. During 2018-19, responding Spanish producers' production capacity increased by *** percent then decreased by *** percent from 2019 to 2020.[17] Overall, during 2018-20, Spanish producers' production capacity decreased by *** percent. Spanish producers projected their capacity to remain at the same level in 2021 and 2022 as in 2020 (*** wind towers).

Spanish producers' production increased by *** percent from 2018 to 2019 then decreased by *** percent from 2019 to 2020. Overall, during 2018-20, Spanish producers' production increased by *** percent. Spanish producers projected production to decrease by *** percent (*** wind towers) from 2020 to 2021, and then decrease by *** percent (*** wind towers) from 2021 to 2022.

[17] Capacity changes were driven by ***. Email from ***, May 17, 2021.

Table VII-11
Wind towers: Data on industry in Spain, by period

Quantity in units

Item	2018	2019	2020	Projection 2021	Projection 2022
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 VII-11 Continued
Wind towers: Data on industry in Spain, by period

Shares and ratios in precent

Item	2018	2019	2020	Projection 2021	Projection 2022
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.

As a result of ***, Spanish producers' capacity utilization increased by *** percentage points from 2018 to 2019. However, *** caused capacity utilization to decrease by *** percentage points from 2019 to 2020. Spanish producers' capacity utilization is projected to decrease by *** percentage points from 2020 to 2021, then decrease by *** percentage points from 2021 to 2022 as a result of lower projected production.

During 2018-20, Spanish producers' commercial home market shipments increased by *** percent, while export shipments, largely to non-U.S. markets, fluctuated. Overall, during 2018-20, Spanish producers' U.S. market export shipments increased by *** percent (***

wind towers) and export shipments to all other markets decreased by *** percent (*** wind towers).[18]

Alternative products

As shown in table VII-12, responding firms in Spain produced other products on the same equipment and machinery used to produce wind towers. This production accounted for less than *** percent total production on the same machinery as wind towers in 2018 and 2020. There was *** production of out-of-scope merchandise on the same equipment used to produce wind towers in 2019. ***.[19]

Table VII-12
Wind towers: Overall capacity and production on the same equipment as in-scope production by producers in Spain by period

Quantity in units; ratio in percent

Item	Measure	2018	2019	2020
Overall capacity	Quantity	***	***	***
Wind towers production	Quantity	***	***	***
Other production	Quantity	***	***	***
Total production	Quantity	***	***	***
Overall capacity utilization	Ratio	***	***	***
Wind towers production	Share	***	***	***
Other production	Share	***	***	***
Total production	Share	100.0	100.0	100.0

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

[18] ***.

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

Exports

Table VII-13 presents data for exports of tower and lattice masts of iron or steel (including wind towers) from Spain in descending order of value for 2020. The leading export markets for these towers and lattice masts from Spain, by value, in 2020 were Germany, France and the United States, accounting for 21.1 percent, 20.5 percent, and 13.2 percent, respectively.

Table VII-13
Tower and lattice masts of iron or steel (including wind towers): Exports from Spain, by period

Value in 1,000 dollars; shares in percent

Destination market	Measure	2018	2019	2020
United States	Value	9,287	12,813	47,207
Germany	Value	54,993	55,782	75,962
France	Value	75,157	70,889	73,537
Denmark	Value	26,429	9,474	24,010
United Kingdom	Value	24,860	10,902	23,953
Greece	Value	29,131	14,688	19,661
Belgium	Value	2,412	4,336	16,577
Sweden	Value	27,281	3,994	14,924
Portugal	Value	2,708	895	11,638
All other destination markets	Value	64,824	167,755	50,473
All destination markets	Value	317,082	351,528	357,943
United States	Share of value	2.9	3.6	13.2
Germany	Share of value	17.3	15.9	21.2
France	Share of value	23.7	20.2	20.5
Denmark	Share of value	8.3	2.7	6.7
United Kingdom	Share of value	7.8	3.1	6.7
Greece	Share of value	9.2	4.2	5.5
Belgium	Share of value	0.8	1.2	4.6
Sweden	Share of value	8.6	1.1	4.2
Portugal	Share of value	0.9	0.3	3.3
All other destination markets	Share of value	20.4	47.7	14.1
All destination markets	Share of value	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 7308.20 as reported by Eurostat in the Global Trade Atlas database, accessed May 13, 2021.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2020 data.

Subject countries combined

Table VII-14 presents summary data on wind towers operations of the reporting subject producers in the subject countries.

Table VII-14
Wind towers: Data on industry in subject countries, by period

Quantity in units

Item	2018	2019	2020	Projection 2021	Projection 2022
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 VII-14 Continued
Wind towers: Data on industry in subject countries, by period

Shares and ratios in precent

Item	2018	2019	2020	Projection 2021	Projection 2022
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.

The collective annual production capacity for the responding foreign producers in the subject countries increased by *** percent from 2018-20, with the majority of the increase occurring from 2019 to 2020. Production capacity for the foreign producers in the subject countries is projected to be *** in 2021 and 2022 as in 2020.

During 2018-20, foreign producers' production increased by *** percent, with a majority of the increase occurring from 2018 to 2019. Production is projected to increase by *** percent from 2020 to 2022. Responding foreign producers' capacity utilization increased from *** percent in 2018 to *** percent in 2019 and then decreased to *** percent in 2020. It is projected to be *** percent in 2021 and *** percent in 2022.

Foreign producers' home market shipments in the subject countries increased irregularly by *** percent during 2018-20. It is projected to decrease irregularly by *** percent from 2020 to 2022. During 2018-20, foreign producers' exports to the United States increased ***. Responding foreign producers' collective exports to the United States is projected to decrease by *** from 2020 to 2022.

U.S. inventories of imported merchandise

Table VII-15 presents data on U.S. importers' reported inventories of wind towers. *** end-of-period inventories of wind towers from subject sources during 2018-20. *** end-of-period inventories of wind towers from nonsubject sources during 2018-20, which remained *** from 2018 to 2019 and then decreased by *** from 2019 to 2020.[20]

[20] ***. ***. *** importer/purchaser questionnaire response, section II-8a; and email from ***, June 2, 2021.

Table VII-15
Wind towers: U.S. importers' end-of-period inventories of imports by source, by period

Quantity in units; ratios in percent

Measure	Source	2018	2019	2020
Inventories quantity	India	***	***	***
Ratio to imports	India	***	***	***
Ratio to U.S. shipments of imports	India	***	***	***
Ratio to total shipments of imports	India	***	***	***
Inventories quantity	Malaysia	***	***	***
Ratio to imports	Malaysia	***	***	***
Ratio to U.S. shipments of imports	Malaysia	***	***	***
Ratio to total shipments of imports	Malaysia	***	***	***
Inventories quantity	Spain	***	***	***
Ratio to imports	Spain	***	***	***
Ratio to U.S. shipments of imports	Spain	***	***	***
Ratio to total shipments of imports	Spain	***	***	***
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	Nonsubject	***	***	***
Ratio to imports	Nonsubject	***	***	***
Ratio to U.S. shipments of imports	Nonsubject	***	***	***
Ratio to total shipments of imports	Nonsubject	***	***	***
Inventories quantity	All	***	***	***
Ratio to imports	All	***	***	***
Ratio to U.S. shipments of imports	All	***	***	***
Ratio to total shipments of imports	All	***	***	***

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

U.S. importers' outstanding orders

The Commission requested that importers indicate whether they imported or arranged for the importation of wind towers from India, Malaysia, Spain, or nonsubject sources after December 31, 2020 (table VII-16). *** reported such imports. Overall, the majority of arranged imports reported by responding U.S. importers are from India, with Malaysia accounting for the next largest share. Responding U.S. importers' reported arranged imports from Spain only for ***.

Table VII-16
Wind towers: Arranged imports, January 2021 through December 2021

Quantity in units

Source of arranged imports	Jan-Mar 2021	Apr-Jun 2021	Jul-Sept 2021	Oct-Dec 2021	Total
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubect sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Antidumping or countervailing duty orders in third-country markets[21]

Based on available information, wind towers from India, Malaysia, and Spain have not been subject to antidumping or countervailing duty investigations outside of the United States in the last five years.

[21] Information comes from WTO member submitted semi-annual reports on their anti-dumping and countervailing duty orders. No countervailing duties in third-country markets were identified by staff research. World Trade Organization, "Anti-dumping Measures," https://www.wto.org/english/tratop_e/adp_e/adp_e.htm, retrieved May 6, 2021; and World Trade Organization, "Subsidies and Countervailing Measures," https://www.wto.org/english/tratop_e/scm_e/scm_e.htm, retrieved May 6, 2021.

Information on nonsubject countries[22]

Specific information about global exports of wind towers by nonsubject countries is not readily available because wind towers are traded under HS subheading 7308.20, which includes numerous other fabricated products of iron and steel, of which the proportion that is the in-scope produce is not known. Table VII-17 presents global exports of tower and lattice masts of iron or steel.

Six firms reported importing wind towers from nonsubject sources during 2018-20. *** reported importing from *** in Canada and *** in Korea.[23] *** reported importing from *** in India, *** in Malaysia, *** in Spain, and ***.[24] *** reported importing from ***.[25] *** reported importing from *** in Korea, *** in Indonesia, and *** in Mexico.[26] *** reported importing from *** in Spain and ***.[27] *** reported importing from *** in China.[28] *** reported importing from *** in Indonesia.[29]

[22] Information comes from WTO member submitted semi-annual reports on their anti-dumping and countervailing duty orders. No countervailing duties in third-country markets were identified by staff research. World Trade Organization, “Anti-dumping Measures,” https://www.wto.org/english/tratop_e/adp_e/adp_e.htm, retrieved May 6, 2021; and World Trade Organization, “Subsidies and Countervailing Measures,” https://www.wto.org/english/tratop_e/scm_e/scm_e.htm, retrieved May 6, 2021.

[23] ***, importer/purchaser questionnaire response, section II-8a.

[24] ***, importer/purchaser questionnaire response, section II-5a, II-6a, II-7a, and II-8a.

[25] ***, importer/purchaser questionnaire response, sections II-6a and II-8a.

[26] ***, importer/purchaser questionnaire response, section II-8a.

[27] ***, importer/purchaser questionnaire response, sections II-7a and II-8a.

[28] ***, importer/purchaser questionnaire response, section II-8a.

[29] ***, importer/purchaser questionnaire response, section II-8a.

Table VII-17
Towers and lattice masts of iron and steel: Global exports by exporter, by period

Quantity in units; share of value is the share of total exports by value in percent

Exporting country	Measure	2018	2019	2020
United States	Value	30,908	47,441	24,334
India	Value	256,844	344,878	351,498
Malaysia	Value	60,499	43,613	147,405
Spain	Value	317,082	351,528	357,943
China	Value	492,077	425,525	482,877
Turkey	Value	241,370	250,652	317,958
Germany	Value	194,414	249,878	234,252
Netherlands	Value	47,570	110,998	220,496
Canada	Value	107,750	102,863	200,418
Denmark	Value	506,869	266,078	198,818
Belgium	Value	3,398	80,600	88,256
Korea	Value	5,673	51,815	75,856
All other exporters	Value	1,079,280	728,086	524,490
All reporting exporters	Value	3,343,734	3,053,954	3,224,599
United States	Share of value	0.9	1.6	0.8
India	Share of value	7.7	11.3	10.9
Malaysia	Share of value	1.8	1.4	4.6
Spain	Share of value	9.5	11.5	11.1
China	Share of value	14.7	13.9	15.0
Turkey	Share of value	7.2	8.2	9.9
Germany	Share of value	5.8	8.2	7.3
Netherlands	Share of value	1.4	3.6	6.8
Canada	Share of value	3.2	3.4	6.2
Denmark	Share of value	15.2	8.7	6.2
Belgium	Share of value	0.1	2.6	2.7
Korea	Share of value	0.2	1.7	2.4
All other exporters	Share of value	32.3	23.8	16.3
All reporting exporters	Share of value	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 7308.20 reported by various national statistical authorities in the Global Trade Atlas database, accessed May 13, 2021.

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
85 FR 63137 October 6, 2020	*Utility Scale Wind Towers from India, Malaysia, and Spain; Institution of Anti-Dumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2020-10-06/pdf/2020-22026.pdf
85 FR 65028 October 14, 2020	*Notice of Extension of the Deadline for Determining the Adequacy of the Antidumping and Countervailing Duty Petitions: Utility Scale Wind Towers From India, Malaysia, and Spain*	https://www.govinfo.gov/content/pkg/FR-2020-10-14/pdf/2020-22681.pdf
85 FR 67372 October 22, 2020	*Utility Scale Wind Towers From India, Malaysia, and Spain Revised Schedule for the Subject Investigations*	https://www.govinfo.gov/content/pkg/FR-2020-10-22/pdf/2020-23359.pdf
85 FR 73019 November 16, 2020	*Utility Scale Wind Towers From India and Malaysia: Initiation of Countervailing Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2020-11-16/pdf/2020-25227.pdf
85 FR 73023 November 16, 2020	*Utility Scale Wind Towers From India, Malaysia, and Spain: Initiation of Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2020-11-16/pdf/2020-25226.pdf
85 FR 79217, December 9, 2020	*Utility Scale Wind Towers From India, Malaysia, and Spain*	https://www.govinfo.gov/content/pkg/FR-2020-12-09/pdf/2020-27010.pdf

Table continued on next page.

Citation	Title	Link
85 FR 84302 December 28, 2020	*Utility Scale Wind Towers from India and Malaysia: Postponement of Preliminary Determinations in the Countervailing Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2020-12-28/pdf/2020-28595.pdf
86 FR 14071, March 12, 2021	*Utility Scale Wind Towers From India and Malaysia: Postponement of Preliminary Determinations in the Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-03-12/pdf/2021-05187.pdf
86 FR 15897, March 25, 2021	*Utility Scale Wind Towers From India: Preliminary Affirmative Countervailing Duty Determination, and Alignment of Final Determination With Final Antidumping Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2021-03-25/pdf/2021-06196.pdf
86 FR 15887, March 25, 2021	*Utility Scale Wind Towers From Malaysia: Preliminary Affirmative Countervailing Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2021-03-25/pdf/2021-06197.pdf
86 FR 17354, April 2, 2021	*Utility Scale Wind Towers From Spain: Preliminary Affirmative Determination of Sales at Less Than Fair Value*	https://www.govinfo.gov/content/pkg/FR-2021-04-02/pdf/2021-06869.pdf
86 FR 20197, April 16, 2021	*Utility Scale Wind Towers From India, Malaysia, and Spain; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-04-16/pdf/2021-07900.pdf

Table continued on next page.

Citation	Title	Link
86 FR 27828, May 24, 2021	*Utility Scale Wind Towers From Malaysia: Preliminary Determination of Sales at Not Less Than Fair Value and Postponement of Final Determination*	https://www.govinfo.gov/content/pkg/FR-2021-05-24/pdf/2021-10918.pdf
86 FR 27829, May 24, 2021	*Utility Scale Wind Towers From India: Preliminary Affirmative Determination of Sales at Less Than Fair Value*	https://www.govinfo.gov/content/pkg/FR-2021-05-24/pdf/2021-10913.pdf
86 FR 30593, June 9, 2021	*Utility Scale Wind Towers From Malaysia: Final Affirmative Countervailing Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2021-06-09/pdf/2021-12024.pdf
86 FR 31730, June 15, 2021	*Cancellation of Hearing for Final Phase Countervailing Duty and Anti-Dumping Duty Investigations; Utility Scale Wind Towers From India, Malaysia, and Spain*	https://www.govinfo.gov/content/pkg/FR-2021-06-15/pdf/2021-12562.pdf
86 FR 33656, June 25, 2021	*Utility Scale Wind Towers From Spain: Final Determination of Sales at Less Than Fair Value*	https://www.govinfo.gov/content/pkg/FR-2021-06-25/pdf/2021-13547.pdf

APPENDIX B

PETITIONERS' WITHDRAWL OF REQUEST TO APPEAR AT THE HEARING

June 7, 2021

USITC Inv. Nos. 701-TA-660-661 and 731-TA-1543-1545 (Final)
PUBLIC DOCUMENT

The Honorable Lisa R. Barton
Secretary to the Commission
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

Re: ***Utility Scale Wind Towers from India, Malaysia, and Spain*:** Withdrawal of Request to Appear at Hearing

Dear Secretary Barton:

On behalf of the Wind Tower Trade Coalition, and given that those in opposition have not requested to appear at the hearing, we hereby withdraw our request to appear at and participate in the final phase hearing in the above-referenced investigations, scheduled to be held by the U.S. International Trade Commission on Thursday, June 10, 2021.[1]

[1] Letter from Wiley Rein LLP to Sec'y of the Commission, re: *Utility Scale Wind Towers From India, Malaysia, and Spain: Request to Appear at Hearing* (June 4, 2021).

PUBLIC DOCUMENT

Should you have any questions regarding this submission, please do not hesitate to contact the undersigned.

Respectfully submitted,

/s/ Daniel B. Pickard

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<u>CERTIFICATE OF SERVICE</u>

PUBLIC SERVICE

Utility Scale Wind Towers from India, Malaysia, and Spain
Inv. Nos. 701-TA-660-661 and 731-TA-1543-1545
Final

I certify that a copy of this public submission was served on the following parties, via electronic service, on June 7, 2021.

/s/ Vidushi Shrimali

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APPENDIX C

SUMMARY DATA

Total market

Table C-1
Wind towers: Summary data concerning the U.S. total market, 2018-20
(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2018	2019	2020	2018-20	2018-19	2019-20
U.S. total market consumption quantity:						
Amount	3,762	5,102	5,156	▲37.1	▲35.6	▲1.1
Producers' share (fn1)	***	***	***	▼***	▼***	▼***
Importers' share (fn1):						
India	***	***	***	▲***	▲***	▲***
Malaysia	***	***	***	▲***	▲***	▲***
Spain	***	***	***	▲***	▼***	▲***
Subject sources	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▼***	▲***	▼***
All import sources	***	***	***	▲***	▲***	▲***
U.S. total market consumption value:						
Amount	1,118,778	1,577,867	1,762,512	▲57.5	▲41.0	▲11.7
Producers' share (fn1)	***	***	***	▼***	▼***	▼***
Importers' share (fn1):						
India	***	***	***	▲***	▲***	▲***
Malaysia	***	***	***	▲***	▲***	▲***
Spain	***	***	***	▲***	▼***	▲***
Subject sources	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▲***	▲***	▼***
All import sources	***	***	***	▲***	▲***	▲***
U.S. importers' U.S. shipments of imports from:						
India:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▲***	▲***
Unit value	***	***	***	▲***	▲***	▼***
Ending inventory quantity	***	***	***	***	***	***
Malaysia:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▲***	▲***
Unit value	***	***	***	▲***	▲***	▲***
Ending inventory quantity	***	***	***	***	***	***
Spain:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▼***	▲***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	***
Subject sources:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▲***	▲***
Unit value	***	***	***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	***

Table continued on next page.

Table C-1 continued
Wind towers: Summary data concerning the U.S. total market, 2018-20
(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2018	2019	2020	2018-20	2018-19	2019-20
U.S. importers' U.S. shipments of imports from--Continued:						
Nonsubject sources:						
Quantity	***	***	***	▲***	▲***	▼***
Value	***	***	***	▲***	▲***	▼***
Unit value	***	***	***	▲***	▲***	▲***
Ending inventory quantity	***	***	***	▼***	▼***	▼***
All import sources:						
Quantity	1,064	2,138	2,412	▲126.7	▲100.9	▲12.8
Value	259,145	582,761	807,957	▲211.8	▲124.9	▲38.6
Unit value	$243,557	$272,573	$334,974	▲37.5	▲11.9	▲22.9
Ending inventory quantity	***	***	***	▼***	▼***	▼***
U.S. producers':						
Average capacity quantity	3,609	3,687	3,682	▲2.0	▲2.2	▼(0.1)
Production quantity	2,672	2,895	2,854	▲6.8	▲8.3	▼(1.4)
Capacity utilization (fn1)	74.0	78.5	77.5	▲3.5	▲4.5	▼(1.0)
U.S. shipments:						
Quantity	2,698	2,964	2,744	▲1.7	▲9.9	▼(7.4)
Value	859,633	995,106	954,555	▲11.0	▲15.8	▼(4.1)
Unit value	$318,619	$335,731	$347,870	▲9.2	▲5.4	▲3.6
Export shipments:						
Quantity	---	---	---	---	---	---
Value	---	---	---	---	---	---
Unit value	---	---	---	---	---	---
Ending inventory quantity	***	***	***	▲***	▼***	▲***
Inventories/total shipments (fn1)	***	***	***	▲***	▼***	▲***
Production workers	2,051	2,145	2,205	▲7.5	▲4.6	▲2.8
Hours worked (1,000s)	4,276	4,571	4,713	▲10.2	▲6.9	▲3.1
Wages paid ($1,000)	156,739	160,145	169,516	▲8.2	▲2.2	▲5.9
Hourly wages (dollars per hour)	$36.66	$35.04	$35.97	▼(1.9)	▼(4.4)	▲2.7
Productivity (units per 10,000 hours)	6.2	6.3	6.1	▼(3.1)	▲1.4	▼(4.4)
Unit labor costs	$58,660	$55,318	$59,396	▲1.3	▼(5.7)	▲7.4

Table continued on next page.

Table C-1 continued
Wind towers: Summary data concerning the U.S. total market, 2018-20
(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2018	2019	2020	2018-20	2018-19	2019-20
U.S. producers'--Continued:						
Net sales:						
Quantity	2,698	2,964	2,744	▲1.7	▲9.9	▼(7.4)
Value	858,373	995,106	954,041	▲11.1	▲15.9	▼(4.1)
Unit value	$318,152	$335,731	$347,683	▲9.3	▲5.5	▲3.6
Cost of goods sold (COGS)	788,707	904,581	882,120	▲11.8	▲14.7	▼(2.5)
Gross profit or (loss) (fn2)	69,666	90,525	71,921	▲3.2	▲29.9	▼(20.6)
SG&A expenses	25,339	28,142	29,161	▲15.1	▲11.1	▲3.6
Operating income or (loss) (fn2)	44,327	62,383	42,760	▼(3.5)	▲40.7	▼(31.5)
Net income or (loss) (fn2)	50,272	57,087	44,387	▼(11.7)	▲13.6	▼(22.2)
Unit COGS	$292,330	$305,189	$321,472	▲10.0	▲4.4	▲5.3
Unit SG&A expenses	$9,392	$9,495	$10,627	▲13.2	▲1.1	▲11.9
Unit operating income or (loss) (fn2)	$16,430	$21,047	$15,583	▼(5.2)	▲28.1	▼(26.0)
Unit net income or (loss) (fn2)	$18,633	$19,260	$16,176	▼(13.2)	▲3.4	▼(16.0)
COGS/sales (fn1)	91.9	90.9	92.5	▲0.6	▼(1.0)	▲1.6
Operating income or (loss)/sales (fn1)	5.2	6.3	4.5	▼(0.7)	▲1.1	▼(1.8)
Net income or (loss)/sales (fn1)	5.9	5.7	4.7	▼(1.2)	▼(0.1)	▼(1.1)
Capital expenditures	26,707	17,312	16,969	▼(36.5)	▼(35.2)	▼(2.0)
Research and development expenses	***	***	***	▼***	▲***	▼***
Net assets	433,347	335,123	342,148	▼(21.0)	▼(22.7)	▲2.1

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

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

Merchant market

Table C-2
Wind towers: Summary data concerning the U.S. merchant market, 2018-20
(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2018	2019	2020	2018-20	2018-19	2019-20
U.S. merchant market consumption quantity:						
Amount	***	***	***	▲ ***	▲ ***	▲ ***
Producers' share (fn1)	***	***	***	▼ ***	▼ ***	▼ ***
Importers' share (fn1):						
India	***	***	***	▲ ***	▲ ***	▲ ***
Malaysia	***	***	***	▲ ***	▲ ***	▲ ***
Spain	***	***	***	▲ ***	▼ ***	▲ ***
Subject sources	***	***	***	▲ ***	▲ ***	▲ ***
Nonsubject sources	***	***	***	▼ ***	▲ ***	▼ ***
All import sources	***	***	***	▲ ***	▲ ***	▲ ***
U.S. merchant market consumption value:						
Amount	***	***	***	▲ ***	▲ ***	▲ ***
Producers' share (fn1)	***	***	***	▼ ***	▼ ***	▼ ***
Importers' share (fn1):						
India	***	***	***	▲ ***	▲ ***	▲ ***
Malaysia	***	***	***	▲ ***	▲ ***	▲ ***
Spain	***	***	***	▲ ***	▼ ***	▲ ***
Subject sources	***	***	***	▲ ***	▲ ***	▲ ***
Nonsubject sources	***	***	***	▼ ***	▲ ***	▼ ***
All import sources	***	***	***	▲ ***	▲ ***	▲ ***
U.S. importers' U.S. shipments of imports from:						
India:						
Quantity	***	***	***	▲ ***	▲ ***	▲ ***
Value	***	***	***	▲ ***	▲ ***	▲ ***
Unit value	***	***	***	▲ ***	▲ ***	▼ ***
Ending inventory quantity	***	***	***	***	***	***
Malaysia:						
Quantity	***	***	***	▲ ***	▲ ***	▲ ***
Value	***	***	***	▲ ***	▲ ***	▲ ***
Unit value	***	***	***	▲ ***	▲ ***	▲ ***
Ending inventory quantity	***	***	***	***	***	***
Spain:						
Quantity	***	***	***	▲ ***	▲ ***	▲ ***
Value	***	***	***	▲ ***	▼ ***	▲ ***
Unit value	***	***	***	▼ ***	▼ ***	▼ ***
Ending inventory quantity	***	***	***	***	***	***
Subject sources:						
Quantity	***	***	***	▲ ***	▲ ***	▲ ***
Value	***	***	***	▲ ***	▲ ***	▲ ***
Unit value	***	***	***	▼ ***	▼ ***	▲ ***
Ending inventory quantity	***	***	***	***	***	***

Table continued on next page.

Table C-2 continued
Wind towers: Summary data concerning the U.S. merchant market, 2018-20
(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2018	2019	2020	2018-20	2018-19	2019-20
U.S. importers' U.S. shipments of imports from--Continued:						
Nonsubject sources:						
Quantity	***	***	***	▲***	▲***	▼***
Value	***	***	***	▲***	▲***	▼***
Unit value	***	***	***	▲***	▲***	▲***
Ending inventory quantity	***	***	***	▼***	▼***	▼***
All import sources:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▲***	▲***
Unit value	***	***	***	▲***	▲***	▲***
Ending inventory quantity	***	***	***	▼***	▼***	▼***
U.S. producers':						
Commercial U.S. shipments:						
Quantity	***	***	***	▲***	▲***	▼***
Value	***	***	***	▲***	▲***	▼***
Unit value	***	***	***	▲***	▲***	▲***
Commercial 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)	***	***	***	▼***	▼***	▲***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

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

Related party exclusion

Table C-3
Wind towers: Summary data concerning the U.S. total market excluding one U.S. producer *, 2018-20**
(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2018	2019	2020	2018-20	2018-19	2019-20
U.S. total market consumption quantity:						
Amount	***	***	***	▲***	▲***	▲***
Producers' share (fn1):						
Included producers	***	***	***	▼***	▼***	▼***
Excluded producers	***	***	***	▼***	▼***	▼***
All producers	***	***	***	▼***	▼***	▼***
Importers' share (fn1):						
India	***	***	***	▲***	▲***	▲***
Malaysia	***	***	***	▲***	▲***	▲***
Spain	***	***	***	▲***	▼***	▲***
Subject sources	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▼***	▲***	▼***
All import sources	***	***	***	▲***	▲***	▲***
U.S. total market consumption value:						
Amount	***	***	***	▲***	▲***	▲***
Producers' share (fn1):						
Included producers	***	***	***	▼***	▼***	▼***
Excluded producers	***	***	***	▼***	▼***	▼***
All producers	***	***	***	▼***	▼***	▼***
Importers' share (fn1):						
India	***	***	***	▲***	▲***	▲***
Malaysia	***	***	***	▲***	▲***	▲***
Spain	***	***	***	▲***	▼***	▲***
Subject sources	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▲***	▲***	▼***
All import sources	***	***	***	▲***	▲***	▲***
U.S. importers' U.S. shipments of imports from:						
India:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▲***	▲***
Unit value	***	***	***	▲***	▲***	▼***
Ending inventory quantity	***	***	***	***	***	***
Malaysia:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▲***	▲***
Unit value	***	***	***	▲***	▲***	▲***
Ending inventory quantity	***	***	***	***	***	***
Spain:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▼***	▲***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	***

Table continued on next page.

Table C-3 continued

Wind towers: Summary data concerning the U.S. total market excluding one U.S. producer *, 2018-20**

(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2018	2019	2020	2018-20	2018-19	2019-20
U.S. importers' U.S. shipments of imports from--Continued:						
Subject sources:						
Quantity	***	***	***	▲ ***	▲ ***	▲ ***
Value	***	***	***	▲ ***	▲ ***	▲ ***
Unit value	***	***	***	▼ ***	▼ ***	▲ ***
Ending inventory quantity	***	***	***	***	***	***
Nonsubject sources:						
Quantity	***	***	***	▲ ***	▲ ***	▼ ***
Value	***	***	***	▲ ***	▲ ***	▼ ***
Unit value	***	***	***	▲ ***	▲ ***	▲ ***
Ending inventory quantity	***	***	***	▼ ***	▼ ***	▼ ***
All import sources:						
Quantity	***	***	***	▲ ***	▲ ***	▲ ***
Value	***	***	***	▲ ***	▲ ***	▲ ***
Unit value	***	***	***	▲ ***	▲ ***	▲ ***
Ending inventory quantity	***	***	***	▼ ***	▼ ***	▼ ***
Included U.S. producers':						
Average capacity quantity	***	***	***	▲ ***	▲ ***	▲ ***
Production quantity	***	***	***	▲ ***	▲ ***	▲ ***
Capacity utilization (fn1)	***	***	***	▲ ***	▲ ***	▼ ***
U.S. shipments:						
Quantity	***	***	***	▲ ***	▲ ***	▼ ***
Value	***	***	***	▲ ***	▲ ***	▼ ***
Unit value	***	***	***	▲ ***	▲ ***	▲ ***
Export shipments:						
Quantity	***	***	***	***	***	***
Value	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Ending inventory quantity	***	***	***	▼ ***	▼ ***	▲ ***
Inventories/total shipments (fn1)	***	***	***	▼ ***	▼ ***	▲ ***
Production workers	***	***	***	▲ ***	▲ ***	▲ ***
Hours worked (1,000s)	***	***	***	▲ ***	▲ ***	▲ ***
Wages paid ($1,000)	***	***	***	▲ ***	▲ ***	▲ ***
Hourly wages (dollars per hour)	***	***	***	▼ ***	▼ ***	▲ ***
Productivity (units per 10,000 hours)	***	***	***	▼ ***	▼ ***	▼ ***
Unit labor costs	***	***	***	▲ ***	▼ ***	▲ ***

Table continued on next page.

Table C-3 continued

Wind towers: Summary data concerning the U.S. total market excluding one U.S. producer *, 2018-20**

(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2018	2019	2020	2018-20	2018-19	2019-20
Included 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	***	***	***	▼***	▲***	▼***
Net assets	***	***	***	▼***	▼***	▲***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

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

APPENDIX D

APPENDIX FOR PART I

No data included in this appendix

APPENDIX E

APPENDIX FOR PART II

Underlying data for Figure II-1
Wind towers: U.S. utility-scale wind turbine installations, 2012-20

Period	U.S. Installations (megawatts)
2012	13,341
2013	1,088
2014	4,308
2015	8,595
2016	8,205
2017	7,010
2018	7,589
2019	9,132
2020	14,200

Source: AWEA, U.S. Wind Industry First Quarter 2020 Market Report, p. 5 and https://www.awea.org/resources/publications-and-reports/market-reports/2020-u-s-wind-industry-market-reports-(1)/q12020_public, retrieved April 1, 2021.

Underlying data for Figure II-2
U.S. electric power generation, utility scale facilities total annual amount, 2011-20

Period	Power generated by all fuels (millions of megawatt hours)
2011	4,100
2012	4,048
2013	4,066
2014	4,094
2015	4,078
2016	4,077
2017	4,034
2018	4,178
2019	4,128
2020	4,009

Source: U.S Energy Information Administration, "Net Generation by Energy Source", https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_1_01, retrieved April 1, 2021.

Underlying data for Figure II-3
Net U.S. electricity generation, by sector, 2020

Energy source	Share of electricity production (percent)
Coal	19.3
Natural gas	40.3
Nuclear	19.7
Hydroelectric	7.3
Wind	8.4
Solar	3.3

Source: U.S. Energy Information Administration, https://www.eia.gov/electricity/data/browser/, retrieved April 1, 2021.

Underlying data for Figure II-4
Annual new U.S. electrical generating capacity by source type, 2018-20 (gigawatt hours)

Type of power	2018	2019	2020
Natural Gas	19.3	8.0	6.6
Wind	6.9	9.3	23.5
Solar	9.3	10.2	17.8
Other	0.5	0.4	1.4

Source: U.S Energy Information Administration, Annual Energy Outlook 2021, https://www.eia.gov/outlooks/aeo/electricity/sub-topic-02.php, retrieved March 2, 2021.

APPENDIX F

APPENDIX FOR PART III

No data included in this appendix

APPENDIX G

APPENDIX FOR PART IV

No data included in this appendix

APPENDIX H

APPENDIX TO PART V

Table for figure V-1
Producer price index: Hot-rolled steel bar, plate, and structural shapes, January 2018 to March 2021

January 2018 = 100 percent

Period	Steel index
1/2018	100.0
2/2018	105.1
3/2018	108.0
4/2018	110.9
5/2018	115.1
6/2018	118.0
7/2018	119.0
8/2018	121.9
9/2018	122.5
10/2018	122.1
11/2018	122.0
12/2018	122.6
1/2019	122.8
2/2019	121.9
3/2019	121.4
4/2019	121.7
5/2019	120.0
6/2019	118.7
7/2019	113.7
8/2019	111.8
9/2019	111.2
10/2019	108.5
11/2019	106.5
12/2019	104.5
1/2020	106.1
2/2020	105.8
3/2020	107.4
4/2020	107.5
5/2020	106.1
6/2020	104.4
7/2020	104.4
8/2020	103.1
9/2020	101.8

Table continued on next page.

Table for figure V-1 Continued
Producer price index: Hot-rolled steel bar, plate, and structural shapes, January 2018 to March 2021

January 2018 = 100 percent

Period	Steel index
10/2020	102.6
11/2020	104.8
12/2020	106.0
1/2021	110.9
2/2021	121.9
3/2021	129.2

Source: Bureau of Labor Statistics via the St. Louis Federal Reserve Bank, accessed April 15, 2021.
https://fred.stlouisfed.org/series/WPU10170301

Purchase events

Purchasers were asked to report the number of instances of “purchase events,” or formal bids or request for proposals tied to a specific project or tied to an internal process for reviewing supplier options. Four firms (***) reported a total of 239 purchase events (table H-1).[1] Of these, U.S.-produced wind towers were considered in *** instances, Indian-produced in *** instances, Malaysian-produced in *** instances, Spanish-produced in *** instances, and wind towers produced in other countries were considered in 107 instances. Purchasers were asked about the number of sales in which they considered both U.S. and subject country sourced wind towers. There were *** instances in which firms considered both U.S. and Indian-produced wind towers (***), *** in which they considered both U.S. and Malaysian-produced (***), and *** in which they considered both U.S. and Spanish-produced (***).

[1] ***.

Table H-1
Wind towers: Number of purchaser events reported by country of bidding potential supplier

Item	Number of purchase events
Number of purchase events total	239
Number of purchase events involving bids from U.S. producers	***
Number of purchase events involving bids from suppliers of wind towers from India	***
Number of purchase events involving bids from suppliers of wind towers from Malaysia	***
Number of purchase events involving bids from suppliers of wind towers from Spain	***
Number of purchase events involving bids from suppliers of wind towers from other countries	107
Number of purchase events involving bids from suppliers of wind towers from India and U.S. producers	***
Number of purchase events involving bids from suppliers of wind towers from Malaysia and U.S. producers	***
Number of purchase events involving bids from suppliers of wind towers from Spain and U.S. producers	***

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

Note.—This table includes data from ***.

In addition, purchasers were asked to provide more details about their purchase events that involved bids from both U.S. producers and product from subject countries reported in the table above. *** purchasers (***) that reported any purchase events that involved bids from suppliers of U.S.-produced wind towers and wind towers produced in subject countries provided additional information on purchase events.[2] These firms' purchases were ***.[3]

Bidding information was provided in the format requested in the questionnaire in only one purchase event (table H-2). ***.

---

[2] ***.

[3] The bid data received indicates bids for wind towers are typically not received in the same year as the purchaser imports or purchases these wind towers. As a result, staff is unable to calculate coverage for the bid data reported in this section. For example, ***. ***.

Table H-2
Wind tower: Bid data reported by *

Winning bid	Losing bid	Price	Reason for winning	Reason for losing	Bid information
***	***	***	***	***	***

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

In addition, *** (tables H-3 to H-5). ***.

***.

Table H-3
Wind towers: * first purchase event, *****

Bidding Supplier (firm name)	Country of origin of wind tower	Number of towers bid on	Initial bid price (per tower, including cost of any services)	Contracted number of towers	Purchase price (f.o.b. works, per tower, including cost of any services)	Estimated freight and logistics costs to U.S. port (dollars per tower)	Length of contract (months)	Reason bid was accepted or rejected
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***

Table continued on next page.

Table H-3 Continued
Wind towers: * first purchase event, *****

Bidding Supplier (firm name)	Country of origin of wind tower	Number of towers bid on	Initial bid price (per tower, including cost of any services)	Contracted number of towers	Purchase price (f.o.b. works, per tower, including cost of any services)	Estimated freight and logistics costs to U.S. port (dollars per tower)	Length of contract (months)	Reason bid was accepted or rejected
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***

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

Note.—***.

Note.—***.

***.

Table H-4
Wind towers: * second purchase event, *****

Bidding Supplier (firm name)	Country of origin of wind tower	Number of towers bid on	Initial bid price (per tower, including cost of any services)	Contracted number of towers	Purchase price (f.o.b. works, per tower, including cost of any services)	Estimated freight and logistics costs to U.S. port (dollars per tower)	Length of contract (months)	Reason bid was accepted or rejected
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***

Table continued on next page.

Table H-4- Continued
Wind towers: * second purchase event, *****

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

Note.—***.

Note.—***.

***.

Table H-5
Wind towers: * third purchase event, *****

Bidding Supplier (firm name)	Country of origin of wind tower	Number of towers bid on	Initial bid price (per tower, including cost of any services)	Contracted number of towers	Purchase price (f.o.b. works, per tower, including cost of any services)	Estimated freight and logistics costs to U.S. port (dollars per tower)	Length of contract (months)	Reason bid was accepted or rejected
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***

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

Note.—***.

APPENDIX J

APPENDIX FOR PART VI

Table J-1
Wind towers: Firm-by-firm total net sales quantity, by period

Net sales quantity

Quantity in towers

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	2,698	2,964	2,744

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm total net sales value, by period

Net sales value

Value in 1,000 dollars

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	858,373	995,106	954,041

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm cost of goods sold, by period

COGS

Value in 1,000 dollars

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	788,707	904,581	882,120

Table continued on next page.

Table J-1 Continued
Wind towers: Firm-by-firm gross profit or (loss), by period

Gross profit or (loss)

Value in 1,000 dollars

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	69,666	90,525	71,921

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm selling, general and administrative (SG&A) expenses, by period

SG&A expenses

Value in 1,000 dollars

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	25,339	28,142	29,161

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm operating income or (loss), by period

Operating income or (loss)

Value in 1,000 dollars

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	44,327	62,383	42,760

Table continued on next page.

Table J-1 Continued
Wind towers: Firm-by-firm net income or (loss), by period

Net income or (loss)

Value in 1,000 dollars

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	50,272	57,087	44,387

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm ratio of cost of goods sold to net sales value, by period

COGS to net sales ratio

Ratio in percent

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	91.9	90.9	92.5

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm ratio of gross profit or (loss) to net sales value, by period

Gross profit or (loss) to net sales ratio

Ratio in percent

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	8.1	9.1	7.5

Table continued on next page.

Table J-1 Continued
Wind towers: Firm-by-firm ratio of SG&A expenses to net sales value, by period

SG&A expenses to net sales ratio

Ratio in percent

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	3.0	2.8	3.1

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm ratio of operating income or (loss) to net sales value, by period

Operating income or (loss) to net sales ratio

Ratio in percent

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	5.2	6.3	4.5

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm ratio of net income or (loss) to net sales value, by period

Net income or (loss) to net sales ratio

Ratio in percent

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	5.9	5.7	4.7

Table continued on next page.

Table J-1 Continued
Wind towers: Firm-by-firm unit net sales value, by period

Unit net sales value

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	318,152	335,731	347,683

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm unit cost of steel plate, by period

Unit cost of steel plate

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	133,616	142,014	160,005

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm unit cost of flanges, by period

Unit cost of flanges

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	15,644	19,437	20,975

Table continued on next page.

Table J-1 Continued
Wind towers: Firm-by-firm unit other raw material costs, by period

Unit other raw material costs

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	57,757	60,649	56,657

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm unit total raw materials cost, by period

Unit total raw materials cost

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	207,017	222,100	237,637

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm unit direct labor cost, by period

Unit direct labor cost

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	36,538	37,799	38,840

Table continued next page.

Table J-1 Continued
Wind towers: Firm-by-firm unit other factory costs, by period

Unit other factory costs

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	48,775	45,290	44,995

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm unit COGS, by period

Unit COGS

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	292,330	305,189	321,472

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm unit gross profit or (loss), by period

Unit gross profit or (loss)

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	25,821	30,541	26,210

Table continued on next page.

Table J-1 Continued
Wind towers: Firm-by-firm unit SG&A expenses, by period

Unit SG&A expenses

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	9,392	9,495	10,627

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm unit operating income or (loss), by period

Unit operating income or (loss)

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	16,430	21,047	15,583

Table continued.

Table J-1 Continued
Wind towers: Firm-by-firm unit net income or (loss), by period

Unit net income or (loss)

Unit value in dollars per tower

Firm	2018	2019	2020
Arcosa	***	***	***
Broadwind	***	***	***
GRI Towers	***	***	***
Marmen	***	***	***
Ventower	***	***	***
Vestas	***	***	***
All firms	18,633	19,260	16,176

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

Table J-2
Wind towers: Results of merchant market operations of U.S. producers, by item and period

Quantity in towers; value in 1,000 of dollars; ratio in percent and represent ratio to net sales value

Item	Measure	2018	2019	2020
Commercial sales	Quantity	***	***	***
Commercial sales	Value	***	***	***
Cost of steel plate	Value	***	***	***
Cost of flanges	Value	***	***	***
Other raw material costs	Value	***	***	***
Total raw material costs	Value	***	***	***
Direct labor costs	Value	***	***	***
Other factory costs	Value	***	***	***
Cost of goods sold	Value	***	***	***
Gross profit or (loss)	Value	***	***	***
SG&A expenses	Value	***	***	***
Operating income or (loss)	Value	***	***	***
Interest expense	Value	***	***	***
Other expenses	Value	***	***	***
Other income items	Value	***	***	***
Net income or (loss)	Value	***	***	***
Depreciation/amortization	Value	***	***	***
Estimated cash flow from operations	Value	***	***	***
Cost of steel plate	Ratio	***	***	***
Cost of flanges	Ratio	***	***	***
Other raw material costs	Ratio	***	***	***
Total raw material costs	Ratio	***	***	***
Direct labor costs	Ratio	***	***	***
Other factory costs	Ratio	***	***	***
Cost of goods sold	Ratio	***	***	***
Gross profit	Ratio	***	***	***
SG&A expense	Ratio	***	***	***
Operating income or (loss)	Ratio	***	***	***
Net income or (loss)	Ratio	***	***	***

Table continued on next page.

Table J-2 Continued
Wind towers: Results of merchant market operations of U.S. producers, by item and period

Share in percent and represent share of cost of goods sold; unit value in dollars per tower; count in number of firms reporting

Item	Measure	2018	2019	2020
Cost of steel plate	Share	***	***	***
Cost of flanges	Share	***	***	***
Other raw material costs	Share	***	***	***
Total raw material costs	Share	***	***	***
Direct labor costs	Share	***	***	***
Other factory costs	Share	***	***	***
Cost of goods sold	Share	***	***	***
Commercial sales	Unit value	***	***	***
Steel plate	Unit value	***	***	***
Flanges	Unit value	***	***	***
Other raw materials	Unit value	***	***	***
Total raw material costs	Unit value	***	***	***
Direct labor costs	Unit value	***	***	***
Other factory costs	Unit value	***	***	***
Cost of goods sold	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	***	***	***

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

Table J-3
Wind towers: Changes in merchant market average per tower values, between comparison periods

Change in percent

Item	2018-20	2018-19	2019-20
Commercial sales	***	***	***
Cost of steel plate	***	***	***
Cost of flanges	***	***	***
Other raw material costs	***	***	***
Total raw material costs	***	***	***
Direct labor costs	***	***	***
Other factory costs	***	***	***
Cost of goods sold	***	***	***

Table continued on next page.

Table J-3 Continued
Wind towers: Changes in merchant market average per tower values, between comparison periods

Change in dollars per tower

Item	2018-20	2018-19	2019-20
Commercial sales	***	***	***
Cost of steel plate	***	***	***
Cost of flanges	***	***	***
Other raw material costs	***	***	***
Total raw material costs	***	***	***
Direct labor costs	***	***	***
Other factory costs	***	***	***
Cost of goods sold	***	***	***
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.

APPENDIX K

APPENDIX FOR PART VII

No data included in this appendix

APPENDIX L

CROSS-CUTTING ISSUES

Table L-1
Wind towers: U.S. merchant market consumption, by period

Quantity in units; value in 1,000 dollars

Source of U.S. merchant market consumption	Measure	2018	2019	2020
U.S. producers' commercial U.S. shipments	Quantity	***	***	***
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers' commercial U.S. shipments	Value	***	***	***
India	Value	***	***	***
Malaysia	Value	***	***	***
Spain	Value	***	***	***
Subject sources	Value	***	***	***
Nonsubject sources	Value	***	***	***
All import sources	Value	***	***	***
All sources	Value	***	***	***

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

Figure L-1
Wind towers: U.S. merchant market consumption, by period

* * * * * * *

Table L-2
Wind towers: Market shares for the U.S. merchant market, by period

Shares in percent

Source of U.S. merchant market consumption	Measure	2018	2019	2020
U.S. producers' commercial U.S. shipments	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0
U.S. producers' commercial U.S. shipments	Share of value	***	***	***
India	Share of value	***	***	***
Malaysia	Share of value	***	***	***
Spain	Share of value	***	***	***
Subject sources	Share of value	***	***	***
Nonsubject sources	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.

Table L-3
Wind towers: U.S. producers' capacity, production, and capacity utilization excluding one U.S. producer *, by period**

Quantity in units; ratio in percent

Item	Measure	2018	2019	2020
Capacity	Quantity	***	***	***
Production	Quantity	***	***	***
Capacity utilization	Ratio	***	***	***

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

Table L-4
Wind towers: U.S. producers’ shipments by location of shipment excluding one U.S. producer *, by period**

Quantity in units; value in 1,000 dollars; unit values in dollars per unit; shares in percent

Item	Measure	2018	2019	2020
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.

Table L-5
Wind towers: U.S. producers' inventories excluding one U.S. producer *, by period**

Quantity in units; ratios in percent

Item	2018	2019	2020
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.

Table L-6
Wind towers: U.S. producers' employment related data excluding one U.S. producer *, by period**

Item	2018	2019	2020
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 (units per 10,000 hours)	***	***	***
Unit labor costs (dollars per unit)	***	***	***

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

Table L-7
Wind towers: Apparent U.S. consumption excluding one U.S. producer *, by period**

Quantity in units; value in 1,000 dollars

Source	Measure	2018	2019	2020
Included U.S. producers	Quantity	***	***	***
Excluded U.S. producer	Quantity	***	***	***
All U.S. producers	Quantity	2,698	2,964	2,744
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
Included U.S. producers	Value	***	***	***
Excluded U.S. producer	Value	***	***	***
All U.S. producers	Value	859,633	995,106	954,555
India	Value	***	***	***
Malaysia	Value	***	***	***
Spain	Value	***	***	***
Subject sources	Value	***	***	***
Nonsubject sources	Value	***	***	***
All import sources	Value	***	***	***
All sources	Value	***	***	***

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

Table L-8
Wind towers: Market shares excluding one U.S. producer *, by period**

Shares in percent

Source	Measure	2018	2019	2020
Included U.S. producers	Share of quantity	***	***	***
Excluded U.S. producer	Share of quantity	***	***	***
All U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0
Included U.S. producers	Share of value	***	***	***
Excluded U.S. producer	Share of value	***	***	***
All U.S. producers	Share of value	***	***	***
India	Share of value	***	***	***
Malaysia	Share of value	***	***	***
Spain	Share of value	***	***	***
Subject sources	Share of value	***	***	***
Nonsubject sources	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.

Table L-9
Wind towers: U.S. producers' U.S. shipments, by geographic region and by period

Quantity in units; shares in percent

Region	Measure	2018	2019	2020
Northeast	Quantity	***	***	***
Upper Midwest	Quantity	436	617	541
Lower Midwest	Quantity	903	974	902
Upper Southeast	Quantity	***	***	***
Lower Southeast	Quantity	***	***	***
Central Southwest	Quantity	771	837	727
Mountains	Quantity	***	***	***
Pacific Coast	Quantity	***	***	***
Other	Quantity	***	***	***
All regions	Quantity	***	***	***
Northeast	Share of quantity	***	***	***
Upper Midwest	Share of quantity	***	***	***
Lower Midwest	Share of quantity	***	***	***
Upper Southeast	Share of quantity	***	***	***
Lower Southeast	Share of quantity	***	***	***
Central Southwest	Share of quantity	***	***	***
Mountains	Share of quantity	***	***	***
Pacific Coast	Share of quantity	***	***	***
Other	Share of quantity	***	***	***
All regions	Share of quantity	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.

Note: ***. *** U.S. producer questionnaire response, section II-17.

Table L-10
Wind towers: U.S. importers' U.S. shipments of imports from India, by geographic region and period

Quantity in units; shares in percent

Region	Measure	2018	2019	2020
Northeast	Quantity	***	***	***
Upper Midwest	Quantity	***	***	***
Lower Midwest	Quantity	***	***	***
Upper Southeast	Quantity	***	***	***
Lower Southeast	Quantity	***	***	***
Central Southwest	Quantity	***	***	***
Mountains	Quantity	***	***	***
Pacific Coast	Quantity	***	***	***
Other	Quantity	***	***	***
All regions	Quantity	***	***	***
Northeast	Share of quantity	***	***	***
Upper Midwest	Share of quantity	***	***	***
Lower Midwest	Share of quantity	***	***	***
Upper Southeast	Share of quantity	***	***	***
Lower Southeast	Share of quantity	***	***	***
Central Southwest	Share of quantity	***	***	***
Mountains	Share of quantity	***	***	***
Pacific Coast	Share of quantity	***	***	***
Other	Share of quantity	***	***	***
All regions	Share of quantity	---	100.0	100.0

Table continued on next page.

Table L-10 Continued
Wind towers: U.S. importers' U.S. shipments of imports from Malaysia, by geographic region and period

Quantity in units; shares in percent

Region	Measure	2018	2019	2020
Northeast	Quantity	***	***	***
Upper Midwest	Quantity	***	***	***
Lower Midwest	Quantity	***	***	***
Upper Southeast	Quantity	***	***	***
Lower Southeast	Quantity	***	***	***
Central Southwest	Quantity	***	***	***
Mountains	Quantity	***	***	***
Pacific Coast	Quantity	***	***	***
Other	Quantity	***	***	***
All regions	Quantity	***	***	***
Northeast	Share of quantity	***	***	***
Upper Midwest	Share of quantity	***	***	***
Lower Midwest	Share of quantity	***	***	***
Upper Southeast	Share of quantity	***	***	***
Lower Southeast	Share of quantity	***	***	***
Central Southwest	Share of quantity	***	***	***
Mountains	Share of quantity	***	***	***
Pacific Coast	Share of quantity	***	***	***
Other	Share of quantity	***	***	***
All regions	Share of quantity	***	***	***

Table continued on next page.

Table L-10 Continued
Wind towers: U.S. importers' U.S. shipments of imports from Spain, by geographic region and period

Quantity in units; shares in percent

Region	Measure	2018	2019	2020
Northeast	Quantity	***	***	***
Upper Midwest	Quantity	***	***	***
Lower Midwest	Quantity	***	***	***
Upper Southeast	Quantity	***	***	***
Lower Southeast	Quantity	***	***	***
Central Southwest	Quantity	***	***	***
Mountains	Quantity	***	***	***
Pacific Coast	Quantity	***	***	***
Other	Quantity	***	***	***
All regions	Quantity	***	***	***
Northeast	Share of quantity	***	***	***
Upper Midwest	Share of quantity	***	***	***
Lower Midwest	Share of quantity	***	***	***
Upper Southeast	Share of quantity	***	***	***
Lower Southeast	Share of quantity	***	***	***
Central Southwest	Share of quantity	***	***	***
Mountains	Share of quantity	***	***	***
Pacific Coast	Share of quantity	***	***	***
Other	Share of quantity	***	***	***
All regions	Share of quantity	100.0	100.0	100.0

Table continued on next page.

Table L-10 Continued
Wind towers: U.S. importers' U.S. shipments of imports from subject sources, by geographic region and period

Quantity in units; shares in percent

Region	Measure	2018	2019	2020
Northeast	Quantity	***	***	***
Upper Midwest	Quantity	***	***	***
Lower Midwest	Quantity	***	***	***
Upper Southeast	Quantity	***	***	***
Lower Southeast	Quantity	***	***	***
Central Southwest	Quantity	***	***	***
Mountains	Quantity	***	***	***
Pacific Coast	Quantity	***	***	***
Other	Quantity	***	***	***
All regions	Quantity	***	***	***
Northeast	Share of quantity	***	***	***
Upper Midwest	Share of quantity	***	***	***
Lower Midwest	Share of quantity	***	***	***
Upper Southeast	Share of quantity	***	***	***
Lower Southeast	Share of quantity	***	***	***
Central Southwest	Share of quantity	***	***	***
Mountains	Share of quantity	***	***	***
Pacific Coast	Share of quantity	***	***	***
Other	Share of quantity	***	***	***
All regions	Share of quantity	100.0	100.0	100.0

Table continued on next page.

Table L-10 Continued
Wind towers: U.S. importers' U.S. shipments of imports from nonsubject sources, by geographic region and period

Quantity in units; shares in percent

Region	Measure	2018	2019	2020
Northeast	Quantity	***	***	***
Upper Midwest	Quantity	***	***	***
Lower Midwest	Quantity	***	***	***
Upper Southeast	Quantity	***	***	***
Lower Southeast	Quantity	***	***	***
Central Southwest	Quantity	***	***	***
Mountains	Quantity	***	***	***
Pacific Coast	Quantity	***	***	***
Other	Quantity	***	***	***
All regions	Quantity	***	***	***
Northeast	Share of quantity	***	***	***
Upper Midwest	Share of quantity	***	***	***
Lower Midwest	Share of quantity	***	***	***
Upper Southeast	Share of quantity	***	***	***
Lower Southeast	Share of quantity	***	***	***
Central Southwest	Share of quantity	***	***	***
Mountains	Share of quantity	***	***	***
Pacific Coast	Share of quantity	***	***	***
Other	Share of quantity	***	***	***
All regions	Share of quantity	100.0	100.0	100.0

Table continued on next page.

Table L-10 Continued
Wind towers: U.S. importers' U.S. shipments of imports from all import sources, by geographic region and period

Quantity in units; shares in percent

Region	Measure	2018	2019	2020
Northeast	Quantity	***	***	***
Upper Midwest	Quantity	***	***	***
Lower Midwest	Quantity	***	***	***
Upper Southeast	Quantity	***	***	***
Lower Southeast	Quantity	***	***	***
Central Southwest	Quantity	***	***	***
Mountains	Quantity	***	***	***
Pacific Coast	Quantity	***	***	***
Other	Quantity	***	***	***
All regions	Quantity	***	***	***
Northeast	Share of quantity	***	***	***
Upper Midwest	Share of quantity	***	***	***
Lower Midwest	Share of quantity	***	***	***
Upper Southeast	Share of quantity	***	***	***
Lower Southeast	Share of quantity	***	***	***
Central Southwest	Share of quantity	***	***	***
Mountains	Share of quantity	***	***	***
Pacific Coast	Share of quantity	***	***	***
Other	Share of quantity	***	***	***
All regions	Share of quantity	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.

Note: ***. *** U.S. producer questionnaire response, section II-17.

Note: ***.

Table L-11
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Northeast, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	***	***	***
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0

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Table L-11 Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Upper Midwest, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	436	617	541
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0

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Table L-11 Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Lower Midwest, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	903	974	902
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0

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Table L-11 Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Upper Southeast, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	***	***	***
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	***	***	***

Table continued on next page.

Table L-11 Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Lower Southeast, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	***	***	***
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0

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Table L-11 Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Central Southwest, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	771	837	727
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0

Table continued on next page.

Table L-11 Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Mountains, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	***	***	***
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0

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Table L-11 Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Pacific Coast, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	***	***	***
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	100.0	100.0	100.0

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Table L-11 Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in other regions, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	***	***	***
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	***	***	***

Table continued on next page.

Table L-11 Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in all the regions, by period

Quantity in units; shares in percent

Source	Measure	2018	2019	2020
U.S. producers	Quantity	2,595	3,019	2,824
India	Quantity	***	***	***
Malaysia	Quantity	***	***	***
Spain	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share of quantity	***	***	***
India	Share of quantity	***	***	***
Malaysia	Share of quantity	***	***	***
Spain	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	***	***	***
All sources	Share of quantity	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.

Note: ***. *** U.S. producer questionnaire response, section II-17.

Note: ***.

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