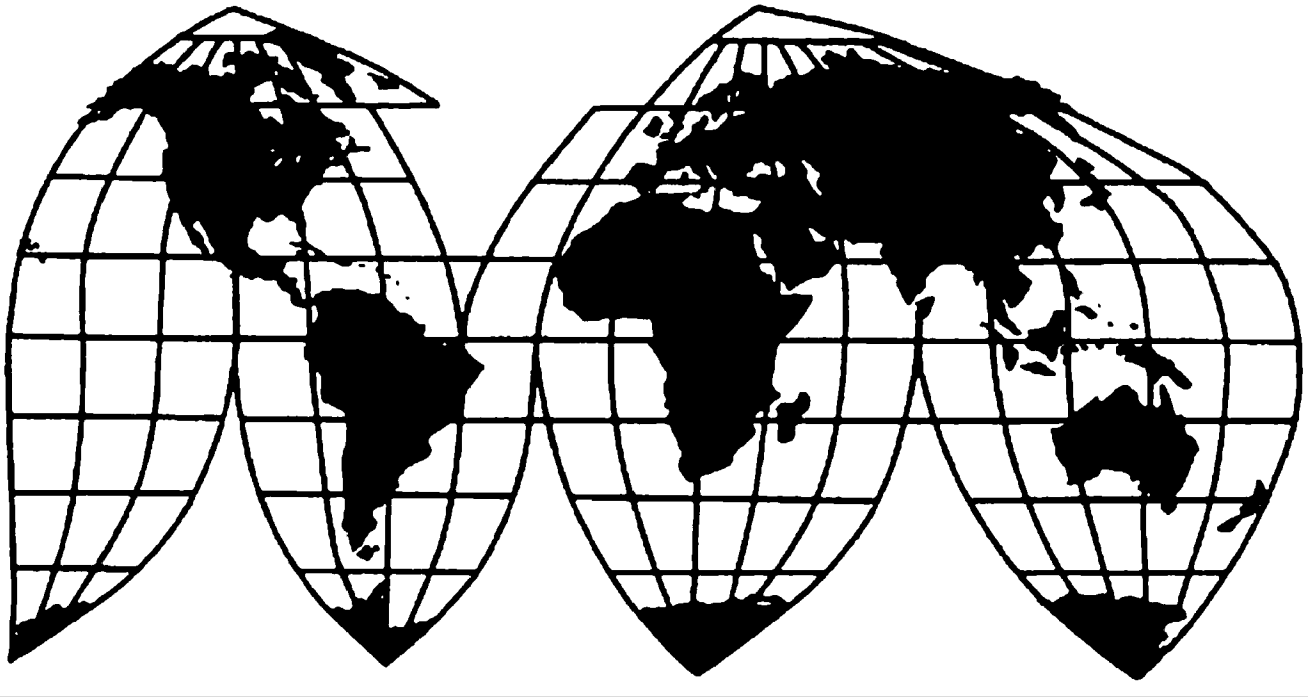
Utility Scale Wind Towers from India, Malaysia, and Spain

Investigation Nos. 701-TA-660-661 and 731-TA-1543-1545 (Preliminary)

Publication 5146 **December 2020**

U.S. International Trade Commission



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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-660-661 and 731-TA-1543-1545 (Preliminary)

Utility Scale Wind Towers from India, Malaysia, and Spain

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of utility scale wind towers from India, Malaysia, and Spain, provided for in subheadings 7308.20.00 and 8502.31.00 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV") and to be subsidized by the governments of India and Malaysia.[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

Pursuant to § 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling, which will be published in the *Federal Register* as provided in § 207.21 of the Commission's rules, upon notice from the U.S. Department of Commerce ("Commerce") of affirmative preliminary determinations in the investigations under §§ 703(b) or 733(b) of the Act, or, if the preliminary determinations are negative, upon notice of affirmative final determinations in those investigations under §§ 705(a) or 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Industrial users, and, if the merchandise under investigation is sold at the retail level, representative consumer organizations have the right to appear as parties in Commission antidumping and countervailing duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations.

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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] 85 FR 73019 (November 16, 2020) and 85 FR 73023 (November 16, 2020).

BACKGROUND

On September 30, 2020, the Wind Tower Trade Coalition (Arcosa Wind Towers Inc. (Dallas, Texas) and Broadwind Towers, Inc. (Manitowoc, Wisconsin)) filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of subsidized imports of utility scale wind towers from India and Malaysia and LTFV imports of utility scale wind towers from India, Malaysia, and Spain. Accordingly, effective September 30, 2020, the Commission instituted countervailing duty investigation Nos. 701-TA-660-661 and antidumping duty investigation Nos. 731-TA-1543-1545 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference through video conferencing 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 October 6, 2020 (85 FR 63137). In light of the restrictions on access to the Commission building due to the COVID–19 pandemic, the Commission conducted its conference through written testimony and video conference on October 21, 2020. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of utility scale wind towers ("wind towers") from India, Malaysia, and Spain that are allegedly sold in the United States at less than fair value and that are allegedly subsidized by the governments of India and Malaysia.

I. The Legal Standard for Preliminary Determinations

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

II. Background

The petitions in these investigations were filed on September 30, 2020 by the Wind Tower Trade Coalition ("Petitioner" or "Coalition"), which consists of domestic producers of wind towers.[3] The Coalition appeared at the staff conference with counsel and submitted a postconference brief.[4]

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

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

[3] The Coalition consists of two domestic producers, Arcosa Wind Towers Inc. ("Arcosa") and Broadwind Towers, Inc. ("Broadwind"). *See* Petition, Vol. I at Exhibit I-1.

[4] In light of the restrictions on access to the Commission building due to the COVID-19 pandemic, the Commission conducted its staff conference in these investigations through submissions of written testimony and a videoconference held on October 21, 2020.

Two respondent parties participated in these preliminary investigations. The American Wind Energy Association ("AWEA"), a trade association for the U.S. wind industry, appeared at the conference and submitted a postconference brief. Vestas Towers America, Inc., a domestic producer of wind towers, and Vestas – American Wind Technology, Inc., a U.S. importer of subject merchandise (collectively "Vestas"), submitted a postconference brief.

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 2019.[5] U.S. import data are based on questionnaire responses received from six U.S. importers, estimated to account for the vast majority of imports of wind towers from India, Malaysia, and Spain in 2019.[6] Foreign producer data are based on the questionnaire responses of five firms that account for the vast majority of production of wind towers in India and Spain in 2019 and all known production of wind towers in Malaysia in 2019.[7]

III. Domestic Like Product

In determining whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[8] 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."[9] 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."[10]

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 the U.S. Department of Commerce ("Commerce").[11] Therefore, Commerce's determination as to the

[5] Confidential Report, Memorandum INV-SS-134 (Nov. 17, 2020) ("CR") at I-4, Public Report ("PR") at I-4.

[6] CR/PR at IV-1.

[7] CR/PR at I-4.

[8] 19 U.S.C. § 1677(4)(A).

[9] 19 U.S.C. § 1677(4)(A).

[10] 19 U.S.C. § 1677(10).

[11] 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,* (Continued…)

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."[12] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[13] 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.[14] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[15] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[16] The Commission may, where

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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).

[12] *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).

[13] *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).

[14] *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. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

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

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

appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[17]

In its notices of initiation, 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.
>
> 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.[18]

Wind towers are large tubular steel towers that are part of wind turbines.[19] Wind turbines convert the kinetic energy of wind to electrical energy and are comprised of three

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

[18] CR/PR at I-10-11. *Utility Scale Wind Towers from India, Malaysia, and Spain*, 85 Fed. Reg. 73023 (Nov. 16, 2020) (initiation of less than fair value investigations); *Utility Scale Wind Towers from India and Malaysia*, 85 Fed. Reg. 73019 (Nov. 16, 2020) (initiation of countervailing duty investigations).

[19] CR/PR at I-13.

main components – the nacelle, rotor, and tower; only the tower is subject to these investigations.[20] 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.[21] 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.[22] These towers are known in the industry as "utility scale" wind towers.[23]

A. 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.[24] It asserts that this would be consistent with the Commission's domestic like product definitions in prior proceedings, including the 2013 original investigations and 2018 five-year reviews concerning wind towers from China and Vietnam, and the 2020 original investigations concerning wind towers from Canada, Indonesia, Korea, and Vietnam.[25] No respondent party contests Petitioner's proposed definition of the domestic like product for purposes of these preliminary determinations.

B. Analysis

Based on the current record, we define a single domestic like product consisting of all wind towers, coextensive with the scope of these investigations.

Physical Characteristics and Uses. The record indicates that all wind towers share the same basic physical characteristics. Wind towers are tubular steel towers that contain interior components such as doors, ladders, flooring, cables and wiring, lights, and/or other accessories.[26] All wind towers are produced from cut-to-length steel plate and steel flanges and are designed to unique specifications of each original equipment manufacturer (OEM), which use the wind towers in producing wind turbines.[27] Notwithstanding any differences in

[20] CR/PR at I-13.
[21] CR/PR at I-13.
[22] CR/PR at I-14; Petition, Vol. I at 8.
[23] *See e.g.*, Petition, Vol. I at 1-2.
[24] Petition, Vol. I at 20-21; Petitioner's Postconf. Br., Exh. 1 at 1-2.
[25] Petition, Vol. I at 20-21; Petitioner's Postconf. Br., Exh. 1 at 1.
[26] Petition, Vol. I at 21; Petitioner's Postconf. Br., Exh.1 at 1.
[27] Petition, Vol. I at 21; Petitioner's Postconf. Br., Exh.1 at 1-2.

OEM specifications, all wind towers are used to support the nacelle and blades in wind turbines for the generation of electricity.[28]

Manufacturing Facilities, Production Processes and Employees. Petitioner states that domestic producers manufacture wind towers in dedicated facilities using dedicated employees.[29] Wind towers also share the same manufacturing process utilizing cut-to-length steel plate that is cut and welded into "cans," and then into tower sections.[30] Although tower sections subsequently undergo a corrosion-protection process that may vary by tower design, all processes generally involve one or more coats of paint on the tower segment interior and two or more coats of paint on the exterior.[31] Once the paint cures, internal components are installed and the individual tower sections are then transferred to a storage area for pick-up by the OEM customer.[32] After the tower sections are transported to the wind project site by the OEM, they are bolted together.[33]

Channels of Distribution. According to Petitioner, all domestically produced wind towers are sold to OEMs for incorporation into wind turbines.[34]

Interchangeability. Wind towers are built to each OEM's specifications.[35] OEM specifications may vary based on differences in height and weight of the wind tower and/or the internal components attached to the tower.[36] Although there is limited interchangeability between wind towers built to different specifications, those produced to the same specifications are generally interchangeable.[37]

Producer and Customer Perceptions. The record indicates that customers and producers perceive all wind towers to be a single distinct product category.[38]

Price. Wind towers are built to each OEM's specifications and may be priced differently depending on differences in specifications. The limited pricing data on the record indicate that domestically produced wind towers produced to different specifications may vary in price, with taller wind towers generally being higher-priced.[39]

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[28] CR/PR at I-23; Petition, Vol. I at 21.
[29] Petitioner's Postconf. Br., Exh. 1 at 2.
[30] CR/PR at I-23-24; Petitioner's Postconf. Br., Exh. 1. at 2.
[31] CR/PR at I-24.
[32] CR/PR at I-25-30.
[33] CR/PR at I-26-27 and Figure I-8 .
[34] CR/PR at II-2; Petitioner's Postconf. Br., Exh. 1 at 2; Conf. Tr. at 31, 73 (El-Sabaawi & Pickard).
[35] CR/PR at I-23 and II-1; Petitioner's Postconf. Br., Exh. 1 at 1-2.
[36] CR/PR at I-23.
[37] Petitioner's Postconf. Br., Exh. 1 at 2.
[38] Petitioner's Postconf. Br., Exh. 1 at 2.
[39] CR/PR at Tables V-3 to V-6.

Conclusion. The record indicates 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 there is a lack of interchangeability and some differences in price among wind towers produced to different OEM specifications, the record does not indicate, nor has any party argued, that any clear dividing line exists among wind towers built to particular designs. In light of the foregoing, and in the absence of any contrary argument, we define a single domestic like product consisting of all wind towers, coextensive with the scope of these investigations.

IV. Domestic Industry and Related Parties

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[40] 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.

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.[41] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[42]

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[40] 19 U.S.C. § 1677(4)(A).

[41] *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).

[42] 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

(Continued…)

The record indicates that two domestic producers, GRI Towers Texas, Inc. ("GRI Towers") and Vestas Towers America, Inc. ("Vestas Towers"), are subject to potential exclusion under the related parties provision. GRI Towers qualifies as a related party since it is affiliated with an Indian producer and exporter of subject merchandise to the U.S. market.[43] Vestas Towers is subject to potential exclusion because it is affiliated with a U.S. importer of subject merchandise.[44] Petitioner contends that it is appropriate to exclude both firms from the definition of the domestic industry as related parties because their relationships provided them access to subject imports and that they, therefore, derived a significant benefit from these relationships.[45] Vestas Towers disagrees that appropriate circumstances exist to exclude it from the domestic industry.[46]

GRI Towers. GRI Towers is the *** U.S. producer of wind towers, accounting for *** percent of reported U.S. production of wind towers in 2019.[47] During the period of investigation, its affiliate GRI India produced and exported subject merchandise from India to the United States.[48] GRI Towers ***.[49]

GRI Towers did not directly import or purchase subject merchandise during the period of investigation. GRI Towers' production increased from *** towers in 2017 to *** towers in 2018 and *** towers in 2019; its production was lower in January-June ("interim") 2020, at *** towers, than in interim 2019, at *** towers.[50] GRI Towers' U.S. production was considerably larger than its Indian affiliate firm's exports to the United States throughout the period of

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(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.

[43] 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 producer and exporter of subject merchandise from 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). *Id*. at I-5. There is no information in the current record indicating that GRI Towers' parent company (GRI Renewable) or GRI Towers' affiliate in Spain (GRI Towers Sevilla)) exported subject merchandise to the United States during the period of investigation. Thus, GRI Towers does not qualify as a related party based on its affiliation with a producer of subject wind towers in Spain.

[44] 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.

[45] Petitioner's Postconf. Br., Exh. 1 at 2-6.

[46] Vestas Postconf. Br. at 1-2. AWEA did not address the issue of related parties.

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

[48] CR/PR at Table VII-3; GRI India Foreign Producers'/Exporters' Questionnaire Response at II-8.

[49] CR/PR at Table III-1; GRI Towers' U.S. Producer Questionnaire Response at I-4.

[50] CR/PR at Table III-4.

investigation, with GRI India's exports to the United States as a share of GRI Towers' domestic production ranging from *** percent during the period of investigation.[51] GRI Towers' capacity and capacity utilization both increased overall from 2017 to 2019; its capacity remained constant in interim 2019 and 2020 while its capacity utilization was lower in interim 2020 than in interim 2019.[52] GRI Towers' capital expenditures for its domestic production operations totaled $*** in 2017, $*** in 2018, $*** in 2019, $*** in interim 2019, and $*** in interim 2020.[53]

The record in these investigations indicates that exports to the United States by GRI Towers' Indian affiliate were considerably smaller than GRI Towers' domestic production during the period of investigation, and there is no indication that GRI Towers' affiliation with an exporter of subject merchandise has benefitted its domestic production operations. It is unclear based on the record of the preliminary phase of this investigation whether GTI Towers affiliation with GRI India caused it to behave differently than other domestic producers.[54] GRI Towers also reported substantial capital expenditures for its domestic production operations. We consequently find that appropriate circumstances do not exist to exclude GRI Towers from the domestic industry as a related party.

Vestas Towers. Vestas Towers is the *** U.S. producer of wind towers, accounting for *** percent of reported U.S. production of wind towers in 2019.[55] During the period of investigation, *** imported subject merchandise from all ***.[56] Vestas Towers ***.[57]

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[51] GRI India's exports of subject wind towers to the U.S. market were *** in 2017 and 2018, *** towers in 2019, *** towers in interim 2019, and *** towers in interim 2020. CR/PR at Table VII-3; GRI India Foreign Producers'/Exporters' Questionnaire Response at II-8. As a ratio to GRI Towers' production, GRI India's exports of subject merchandise to the U.S. market were *** percent in 2017 and 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. *Derived from* GRI India Foreign Producers'/Exporters' Questionnaire Response at II-8 & CR/PR at Tables III-4, VII-3.

[52] GRI Towers' capacity increased from *** towers in 2017 to *** towers in 2018 and *** towers in 2019; its capacity was *** towers in interim 2019 and interim 2020. CR/PR at Table III-4. GRI Towers' capacity utilization increased from *** percent in 2017 to *** percent in 2018, and then declined to *** percent in 2019; its capacity utilization was lower in interim 2020, at *** percent, than in interim 2019, at *** percent. *Id*.

[53] GRI Towers' U.S. Producer Questionnaire Response at III-13a.

[54] GRI Towers' operating income margins were *** the industry average in each year of the period of investigation. GRI Towers' had operating loss margins of *** percent in 2017, *** percent in 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. CR/PR at Table VI-3. GRI Towers reduced its U.S. production in interim 2020 after its Indian affiliate *** and increased its exports to the United States *** from interim 2019 to interim 2020, while other U.S. producers increased their U.S. production as demand increased. CR/PR at Tables III-4, VII-2, and VII-6.

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

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

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

Vestas Towers' U.S. production was considerably larger than its affiliate firm's imports for most of the period of investigation. Specifically, Vestas Towers' U.S. production was *** towers in 2017, *** towers in 2018, and *** towers in 2019, *** towers in interim 2019, and *** towers in interim 2020.[58] During the period of investigation, *** imports of subject merchandise were *** towers in 2017, *** towers in 2018, *** towers in 2019, *** towers in interim 2019 and *** towers in interim 2020.[59] Its affiliate firm's subject imports from *** were equivalent to *** percent of Vestas Towers' domestic production in 2017, *** percent of its domestic production in 2018, *** percent of its domestic production in 2019, *** percent of its domestic production in interim 2019, and *** percent of its domestic production in interim 2020.[60] Vestas Towers states that its affiliate firm imported subject merchandise ***.[61] Vestas Towers also reported significant capital expenditures during the period of investigation totaling $*** in 2017, $*** in 2018, $*** in 2019, $*** in interim 2019, and $*** in interim 2020.[62] It ***.[63]

The record in these investigations indicates that Vestas Towers' affiliate's subject imports were considerably smaller than Vestas Towers' domestic production for most of the period of investigation.[64] Vestas Towers also reported substantial capital expenditures for its domestic production operations, and accounted for a large share of domestic production.[65] Vestas Towers is the largest domestic producer of the domestic like product. We consequently find that appropriate circumstances do not exist to exclude Vestas Towers from the domestic industry as a related party for purposes of these preliminary determinations.

Accordingly, we define the domestic industry to consist of all domestic producers of the domestic like product.

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

[59] CR/PR at Table III-9. *** imports of subject merchandise from *** were (*** towers in 2017, *** towers in 2018, *** towers in 2019 and *** towers in interim 2020; its imports of subject merchandise from *** were *** towers in 2019 and *** towers in interim 2020; and its imports of subject merchandise from *** were *** towers in 2019, *** towers in interim 2019, and *** towers in in interim 2020. *Id*.

[60] CR/PR at Table III-9. Representatives from Vestas noted that ***. Email from ***, dated October 27, 2020; CR/PR at III-13, n.14.

[61] CR/PR at Table III-9. Vestas Towers' capacity utilization was *** percent in 2017, 2018, and 2019; it was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Table III-4.

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

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

[64] In any final phase, the Commission intends to examine whether Vestas Towers benefits from Vestas American's importation of subject wind towers.

[65] Vestas Towers accounted for *** percent of U.S. production in 2017, *** percent in 2018, *** percent in 2019, *** percent in interim 2019, and *** percent in interim 2020. CR/PR at Table III-4.

V. Cumulation[66]

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

[66] 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 3 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 be deemed negligible. 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)). The statute further provides that subject imports from a single country which comprise less than 3 percent of total such imports of the product may not be considered negligible if there are several countries subject to investigation with negligible imports and the sum of such imports from all those countries collectively accounts for more than 7 percent of the volume of all such merchandise imported into the United States. 19 U.S.C. § 1677(24)(A)(ii). In the case of countervailing duty investigations involving developing countries (as designated by the United States Trade Representative), the statute indicates that the negligibility limits are 4 percent and 9 percent, rather than 3 percent and 7 percent. 19 U.S.C. § 1677(24)(B). The United States Trade Representative ("USTR") no longer designates India to be a developing country subject to the 4 percent negligibility threshold for countervailing duty investigations. *See Designations of Developing and Least-Developed Countries Under the Countervailing Duty Law*, 85 Fed. Reg. 7613, 7615-16 (USTR Feb. 10, 2020).

Imports from each of the three subject countries are clearly above the statutory negligibility threshold. Specifically, 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 petitions, subject imports from India accounted for *** percent of total imports, subject imports from Malaysia accounted for *** percent, and subject imports from Spain accounted for *** percent. CR/PR at Table IV-3. Because imports from each subject country are clearly above negligible levels, we find that subject imports from India, Malaysia, and Spain are not negligible for purposes of both the antidumping duty investigations and countervailing duty investigations.

(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;

(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.[67]

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.[68] Only a "reasonable overlap" of competition is required.[69]

Petitioner argues that the Commission should cumulatively assess imports from all subject countries as it did in the prior investigations and reviews concerning wind towers from other countries.[70] It observes that the petitions for all three subject countries were filed simultaneously on the same day and contends that a reasonable overlap in competition exists among wind towers produced in the subject countries and between each subject country and the United States, and that cumulation is therefore mandatory for purposes of its material injury analysis.[71] Specifically, Petitioner claims that when built to purchaser specifications, subject imports from all sources are fungible with each other and with domestically produced wind towers.[72] Additionally, Petitioner asserts that domestically produced wind towers and subject imports from all sources are marketed and sold in the same geographic regions using

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[67] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-80 (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).

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

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

[70] Petition, Vol. I at 23-25; Petitioner's Postconf. Br. at 5-7.

[71] Petition, Vol. I at 26, 36.

[72] Petition, Vol. I at 23-24; Petitioner's Postconf. Br. at 5-6.

the same channels of distribution (*i.e.*, OEMs) and have been simultaneously present in the U.S. market for most of the period of investigation.[73]

No respondent party addressed cumulation.

The statutory threshold for cumulation is satisfied because the Coalition filed the antidumping/countervailing duty petitions with respect to all sources of subject imports on the same day, September 30, 2020.[74] The record also demonstrates a reasonable overlap of competition among subject imports from India, Malaysia, and Spain, and between subject imports from each source and the domestic like product, as explained below.

Fungibility. The record indicates that wind towers are produced to order to proprietary design specifications set by the OEMs, the manufacturers of wind turbines.[75] The vast majority of U.S. producers and importers, which are often the OEMs, reported that the domestic like product and wind towers from India, Malaysia, and Spain were "always" or "frequently" interchangeable in all comparisons, although some importers also reported that they were only "sometimes" interchangeable.[76] In no instances when comparing the domestic product or wind towers from subject sources did any U.S. producer or importer report that they were never interchangeable.[77]

Channels of Distribution. According to Petitioner, domestically produced wind towers and imports of wind towers from all three subject countries were sold exclusively to end users (*i.e.*, OEMs) during the period of investigation.[78]

Geographic Overlap. During the period of investigation, U.S. producers reported shipments to 8 of 9 geographic regions (except the Lower Southeast); a majority of their shipments were sold in the Lower Midwest and Central Southwest.[79] Subject imports from

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[73] Petitioner's Postconf. Br. at 7.

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

[75] CR/PR at II-1.

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

[77] CR/PR at Table II-9. The limited information in the record regarding shipments of subject merchandise by tower height also indicates some degree of product overlap between the domestic like product and subject imports from Malaysia and Spain. The Commission requested information concerning U.S. producers' and U.S. importers' U.S. shipments of wind towers by height for 2019; only two of six importers *** provided such information. U.S. producers reported U.S. shipments of wind towers measuring 81 meters to 120 meters in 2019 with the vast majority of their U.S. shipments of wind towers measuring 81 to 90 meters. *** reported U.S. shipments of wind towers from Malaysia measuring 81 meters to 90 meters while *** reported U.S. shipments of wind towers from Spain that measured 101 meters to 110 meters. CR/PR at IV-8.

[78] CR/PR at II-2; Conf. Tr. at 31 (El-Sabaawi) & 73 (Pickard). This is consistent with what was reported in the recently completed investigations of wind towers from Canada, Indonesia, Korea, and Vietnam. USITC Pub. 5101 at II-3.

[79] CR/PR at II-1 and Tables II-1 and D-1.

India and Malaysia were reported exclusively in the Lower Midwest and Central Southwest.[80] Subject imports from Spain were concentrated in the Central Southwest, Northeast, and Lower Midwest.[81] 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.[82]

Simultaneous Presence in Market. Import data show that the domestic like product and wind towers imported from all subject countries were present in the U.S. market in 2019 and interim 2020, albeit for India and Malaysia with less frequency than the domestic like product.[83]

Conclusion. In sum, the record in the preliminary phase of these investigations indicates that subject imports from each subject country are fungible with the domestic like product and each other, 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. Accordingly, we analyze subject imports from India, Malaysia, and Spain on a cumulated basis for our analysis of whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports.

VI. Reasonable Indication of Material Injury by Reason of Subject Imports

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[84] 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

[80] CR/PR at II-1 and Tables II-1 and D-1.

[81] CR/PR at II-1 and Tables II-1 and D-1.

[82] *See* CR/PR at Tables II-1 and D-1. 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. *See* CR/PR at Table IV-4. U.S. imports from India, Malaysia, and Spain in this category exclusively or overwhelmingly entered at the Southern border. *Id.*

[83] CR/PR at Table IV-5. Subject imports from Spain were present in 41 of 42 months of the period of investigation between January 2017 and June 2020. *Id*. Subject imports from India were present in 18 of 42 months, mostly beginning in March 2019. *Id*. Subject imports from Malaysia were present in 9 of 42 months, beginning in May 2019. *Id*.

[84] 19 U.S.C. §§ 1671b(a), 1673b(a).

operations.[85] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[86] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[87] 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."[88]

Although the statute requires the Commission to determine whether there is a reasonable indication that the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[89] 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.[90] 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.[91]

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

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[85] 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).

[86] 19 U.S.C. § 1677(7)(A).

[87] 19 U.S.C. § 1677(7)(C)(iii).

[88] 19 U.S.C. § 1677(7)(C)(iii).

[89] 19 U.S.C. §§ 1671b(a), 1673b(a).

[90] *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).

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

among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[92] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[93] 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.[94] It is clear that the existence of injury caused by other factors does not compel a negative determination.[95]

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[92] 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.

[93] 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.").

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

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

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject imports."[96] 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."[97] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[98]

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.[99] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[100]

B. Conditions of Competition and the Business Cycle

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

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[96] *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*.

[97] *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.

[98] *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.").

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

[100] *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

We first consider the applicability of the statutory captive production provision.[101] [102] We determine that the threshold criterion for application of the captive production provision has been met. In these investigations, transfers to related firms accounted for between *** percent and *** percent of the domestic industry's U.S. shipments of wind towers between 2017 and 2019.[103] Commercial shipments accounted for the remainder: between *** percent and *** percent of the domestic industry's U.S. shipments in this period.[104] We consider that both the internal transfers and merchant market shipments constitute significant portions of domestic production.

We also determine that the first statutory criterion has been met. This criterion focuses on whether any of the domestic like product that is transferred internally for further processing

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[101] 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.

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

[102] Petitioner argues that the Commission should apply the captive production provision. Petitioner's Postconf. Br. at 18-20. It argues that the threshold criterion of significant production for internal transfers and for sales in the merchant market is satisfied because *** while other U.S. producers sold their production of wind towers into the merchant market. *Id.* at 19. It asserts that the first criterion of the statute is satisfied because Vestas, the only vertically integrated wind tower producer in the United States, ***. *Id*. at 19. It contends that the second criterion of the statute is also satisfied because the wind tower is the "predominant material" input of the finished product, accounting for well over half of the wind turbine's weight. *Id*. at 19-20.

[103] CR/PR at Table III-6. The definition of an "internal transfer" for purposes of the captive production provision was addressed in *Bethlehem Steel Corp. v. United States*, 294 F. Supp. 2d 1359, 1364-1368 (Ct. Int'l Trade 2003). Accordingly, we calculate internal transfers to include internal consumption and transfers to related firms.

[104] CR/PR at Table III-6.

is in fact sold on the merchant market.[105] No domestic producers in these investigations reported diverting wind towers that were to be internally consumed to the merchant market.[106]

In applying the second statutory criterion, we generally consider whether the domestic like product is the predominant material input into a downstream product by referring to its share of the raw material cost of the downstream product, although the Commission has also construed "predominant" material input to mean the main or strongest element, and not necessarily a majority, of the inputs by value.[107] In these investigations, reporting domestic producers indicated that wind towers accounted for *** percent of the finished cost of wind turbines.[108] Based on these costs, for purposes of the preliminary phase of these investigations we find that wind towers are not the predominant material input of the downstream product in which they are used, wind turbines.

Therefore, we conclude that the criteria for application of the captive production provision are not satisfied in these investigations. However, as in prior investigations involving wind towers, we take into consideration the existence of a significant volume of captive production as a relevant condition of competition and consider the domestic merchant market in our injury analysis.[109]

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[105] *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).

[106] CR/PR at III-11.

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

[108] CR/PR at III-11 and Table III-7.

[109] *See, e.g., Utility Scale Wind Towers from Canada, Indonesia, Korea, and Vietnam*, Inv. Nos. 701-TA-627-629 & 731-TA-1458-1461, USITC Pub. 5101 at 26 (Aug. 2020) (Final); *Utility Scale Wind Towers from China and Vietnam*, Inv. Nos. 701-TA-486 and 731-TA-1195-1196, USITC Pub. 4372 at 24 n.199, 38 (Feb. 2013) (Final).

2. Demand Conditions

Wind towers are exclusively used in wind turbines for electrical power-generation projects.[110] 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.[111]

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.[112] The PTC has been renewed five times since 2012 and was extended in 2019 for 2020.[113] The value of the PTC changes from year to year; its value was 40 percent of the project in 2019 and 60 percent in 2020.[114] 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.[115] 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.[116]

Additionally, many states have implemented renewable portfolio standards ("RPS"), which require utilities to source a certain share of energy from renewable sources by a particular date.[117] As of April 2020, 30 states and the District of Columbia had such mandatory standards in place.[118]

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

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[110] CR/PR at II-1.

[111] CR/PR at II-1.

[112] CR/PR at II-11. In the original version of the PTC, only wind farm projects in commercial service by 2012 were eligible for the credit, which led to a push by wind farm developers to complete projects by the end of 2012, and a sharp decrease in turbine installations in 2013. CR/PR at II-10 & Fig. II-1. In 2013, however, the PTC was renewed, and in this and subsequent versions of PTC legislation, projects were eligible for PTC credit if construction began by the expiration dates, which were also extended several times. CR/PR at II-11 & Table II-3. 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. CR/PR at II-11.

[113] CR/PR at II-11.

[114] CR/PR at II-11 and Table II-3.

[115] CR/PR at II-12.

[116] CR/PR at II-12.

[117] CR/PR at II-13.

[118] CR/PR at II-13.

share of electricity generated from renewable energy sources such as wind has been steadily increasing.[119] Wind energy accounted for 40 percent of all new electric generating capacity installed in the United States in 2019.[120] Moreover, the Energy Information Administration estimates that with tax credits included, the average levelized cost of energy 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.[121]

According to Petitioner, wind turbine installations increased from 7,010 megawatts ("MW") in 2017 to 9,132 MW in 2019.[122] Petitioner asserts that wind turbine demand and installations will decline after 2020 due to the gradual phase out of the PTC, but AWEA and Vestas maintain that demand for wind energy will remain strong even without the PTC in place and despite the COVID-19 pandemic.[123]

The majority of market participants reported that demand for wind turbines increased since January 1, 2017.[124] Apparent U.S. consumption in the total market for wind towers increased by 28.2 percent from 2017 to 2019, from 3,746 towers in 2017 to 3,752 towers in 2018 and 4,804 towers in 2019.[125] Apparent U.S. consumption in the total market for wind towers was 17.3 percent higher in interim 2020 at 2,747 towers than in interim 2019 at 2,342 towers.[126]

3. Supply Conditions

In these investigations, 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 period of investigation. Its share

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[119] CR/PR at II-16.

[120] CR/PR at II-16 and Figure II-4.

[121] CR/PR at II-18 and Table II-5 (Energy Information Administration's estimates). According to the U.S. Department of Energy, record-low price levels of energy power purchase agreements for wind generated electricity are attributable to declining costs, improved performance, historically low interest rates, and low natural gas prices. CR/PR at II-19.

[122] Petitioner's Postconf. Br. at 13.

[123] Petitioner's Postconf. Br. at 13; AWEA Postconf. Br. at 5-6, 17-19; Conf. Tr. at 142 and 147-149 (Jochum); Vestas Postconf. Br. at 2.

[124] CR/PR at Table II-8.

[125] CR/PR at Tables IV-6, IV-7, and C-1.

[126] CR/PR at Tables IV-6, IV-7, and C-1. Apparent U.S. consumption of wind towers in the merchant market increased by *** percent from 2017 to 2019, initially decreasing from *** towers in 2017 to *** towers in 2018, then increasing to *** towers in 2019. CR/PR at Table C-2. Apparent U.S. consumption in the merchant market was *** percent higher in interim 2020, at *** towers, than in interim 2019 at *** towers. *Id*.

of apparent U.S. consumption increased from *** percent in 2017 to *** percent in 2018, and then declined to *** percent in 2019.[127] Its share of apparent U.S. consumption was lower in interim 2020 at *** percent than in interim 2019 at *** percent.[128] In 2019, six firms accounted for all known U.S. production of wind towers in the United States, with one firm, Vestas Towers, *** to produce the downstream product, wind turbines.[129] The domestic industry's production capacity increased by *** percent from 2017 to 2019 due to new entrant *** and ***.[130]

Cumulated subject imports were the smallest source of supply. Their share of apparent U.S. consumption declined from *** percent in 2017 to *** percent in 2018, and then increased to *** percent in 2019.[131] Their share of apparent U.S. consumption was higher in interim 2020 at *** percent than in interim 2019 at *** percent.[132]

Nonsubject imports were the second largest source of supply to the U.S. wind tower market. Their share of apparent U.S. consumption was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[133] Nonsubject imports' share of apparent U.S. consumption was lower in interim 2020 at *** percent than in interim 2019 at *** percent.[134] Leading sources of nonsubject imports during the period of investigation include Canada, Indonesia, Korea, and Vietnam.[135] Imports of wind towers from these countries were subject to prior Commission investigations this year and became subject to antidumping and/or countervailing

[127] CR/PR at Tables IV-7 & C-1.

[128] CR/PR at Tables IV-7 & C-1. The domestic industry accounted for *** percent of apparent U.S. consumption in the merchant market in 2017, *** percent in 2018, and *** percent in 2019; its share in the merchant market was lower in interim 2020 at *** percent than in interim 2019 at *** percent. CR/PR at Table C-2.

[129] CR/PR at III-11 and Table III-1.

[130] CR/PR at III-4 and Table III-4. The domestic industry's capacity increased from 3,567 towers in 2017 to 3,609 towers in 2018 and 3,687 towers in 2019. Its capacity was higher in interim 2020 at 1,927 towers than in interim 2019 at 1,884 towers. *See id.*

[131] CR/PR at Tables IV-7 and C-1.

[132] CR/PR at Tables IV-7 and C-1. Cumulated subject imports' share of apparent U.S. consumption in the merchant market declined from *** percent in 2017 to *** percent in 2018, before increasing to *** percent in 2019; their market share was higher in interim 2020 at *** percent than in interim 2019 at *** percent. CR/PR at Table C-2.

[133] CR/PR at Tables IV-7 and C-1.

[134] CR/PR at Tables IV-7 and C-1. Nonsubject imports' share of apparent U.S. consumption in the merchant market was *** percent in 2017, *** percent in 2018; and *** percent in 2019; their share of apparent U.S. consumption was lower in interim 2020 at *** percent than in interim 2019 at *** percent. CR/PR at Table C-2.

[135] CR/PR at VII-23.

duty orders issued by Commerce in August 2020.[136] 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.[137]

4. Substitutability and Other Conditions

The record indicates that there is a moderate-to-high degree of substitutability between domestically produced wind towers and wind towers imported from subject sources.[138] In general, wind towers produced to the same specifications by an OEM-qualified producer are interchangeable.[139] As discussed above, the vast majority of U.S. producers and importers reported that the domestic like product and wind towers India, Malaysia, and Spain were always or frequently interchangeable in all comparisons, although some importers also reported that they were only sometimes interchangeable.[140]

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.[141] Given the size of wind towers and the resulting expense in moving them, shipping costs account for a substantial share of the total delivered cost of wind towers.[142] Additionally, because shipping costs are usually the responsibility of the purchaser, U.S. producers typically quote prices on an f.o.b. basis.[143] Respondents emphasize

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[136] CR/PR at I-4-5; *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").

[137] CR/PR at I-4-5; *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").

[138] CR/PR at II-21.

[139] CR/PR at II-21.

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

[141] CR/PR at II-22. In response to a question regarding the significance of non-price factors when comparing the domestic like product and wind towers from the subject countries, most responding domestic producers reported that factors other than price are sometimes or never significant for all country comparisons. CR/PR at Table II-10. Most importers reported that non-price factors are always significant for all country comparisons except between the domestic like product and subject imports from Malaysia. *Id*. 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 I-25-26, V-3.

[143] CR/PR at V-6. Importers/purchasers arrange transportation from the domestic producer's laydown yard (or the point of importation) to the wind project. CR/PR at I-25 and V-3.

that the total delivered cost, rather than the f.o.b. price, is the purchaser's primary consideration.[144]

Information available indicates that during the period of investigation the vast majority of cumulated subject imports (more than 90 percent) were imported into the United States directly by OEMs.[145] There are a limited number of OEMs that purchase wind towers. Specifically, the *** account for virtually all purchases and imports of wind towers in the United States.[146] Wind towers produced to the same size and specifications compete head to head in the OEM bidding process, during which an OEM typically requests and accepts bids from multiple producers.[147]

All responding U.S. producers and importers reported that wind towers are produced to order, with lead times ranging from 100 to 270 days for U.S. producers and 155 to 270 days for U.S. importers.[148] Most U.S. producers reported selling wind towers through transaction-by-transaction negotiations or contracts, while most importers reported selling wind towers through transaction-by-transaction negotiations.[149]

Steel plate is the primary raw material used in making wind towers, along with flanges, paint, and interior parts.[150] Raw materials account for a substantial share of the cost of goods sold ("COGS") for wind towers. During each full year of the period of investigation, raw materials' share of COGS ranged between *** percent and *** percent.[151]

Since 2018, additional tariffs have been levied on steel used to manufacture wind towers. 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").[152] Three of four responding U.S. importers

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[144] Vestas Postconf. Br. at 4; Conf. Tr. at 133-134 (Jochum). In any final phase investigations, we would invite comments from parties about any reasons to collect more information regarding delivered costs, whether the Commission is likely to secure useful data, and how that could be done.

[145] *Derived from* U.S. Importer' Questionnaires at II-5 to II-7.

[146] CR/PR at I-3 and II-1.

[147] *See, e.g.*, Petitioner's Postconf. Br. at 8-10.

[148] CR/PR at II-21.

[149] CR/PR at V-4 and Table V-1. Five of six responding U.S. producers reported selling wind towers using contracts, four of six producers reported using transaction-by-transaction negotiations, and one of six producers reported using other pricing methods. CR/PR at Table V-1. Four of five responding U.S. importers reported selling wind towers using transaction-by-transaction negotiations, one of five importers reported using contracts, and one of five importers reported using other pricing methods. *Id*.

[150] CR/PR at V-1.

[151] CR/PR at V-1.

[152] CR/PR at I-12.

reported increased steel costs as a result of Section 232 tariffs, while the responses of U.S. producers were mixed.[153] The record indicates that prices for steel plate fluctuated in 2017, increased in 2018, declined in 2019 almost returning to their 2017 levels, and then fluctuated within a narrow range in interim 2020.[154]

In addition to the Section 232 tariffs on steel products, Section 301 tariffs have been imposed on wind towers and certain other raw materials from China used to produce wind towers, including steel plate.[155] These duties are an additional 25 percent on wind towers and 15 percent on raw materials (reduced to 7.5 percent in 2020).[156]

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."[157]

Cumulated subject imports had a substantial and increasing presence in the U.S. market during the period of investigation. The volume of cumulated subject imports for the total market were *** wind towers in 2017 and *** wind towers in 2018, but then increased to *** wind towers in 2019 for an overall increase of *** percent from 2017 to 2019.[158] The volume of cumulated subject imports was *** percent higher in interim 2020, at *** towers, than in interim 2019, at *** towers.[159]

As a share of apparent U.S. consumption, the market share of cumulated subject imports for the total market was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[160] Cumulated subject imports' share of the total market was *** percentage points higher in interim 2020, at *** percent, than in interim 2019 at *** percent.[161] By contrast, the

[153] CR/PR at V-2-3. Two of six responding domestic producers reported that the section 232 tariffs resulted in increased steel costs while the other four producers reported that section 232 tariffs resulted in either fluctuations or no change in steel costs. CR/PR at V-2.

[154] CR/PR at V-1 and Figure V-1.

[155] *See* CR/PR at I-11-12.

[156] *See* CR/PR at I-12.

[157] 19 U.S.C. § 1677(7)(C)(i).

[158] CR/PR at Tables IV-2, IV-6, and C-1.

[159] CR/PR at Tables IV-2, IV-6, and C-1.

[160] CR/PR at Tables IV-7 and C-1. Cumulated subject imports' share of the merchant market was *** percent in 2017, *** percent in 2018, and *** percent in 2019. CR/PR at Table C-2.

[161] CR/PR at Tables IV-7 and C-1. Cumulated subject imports' share of the merchant market was *** percentage points higher in interim 2020, at *** percent, than in interim 2019, at *** percent. CR/PR at Table C-2.

domestic industry's market share for the total market was *** percent in 2017 and *** percent in 2018, and then declined to *** percent in 2019; its market share was lower in interim 2020, at *** percent, than in interim 2019, at *** percent.[162]

Based on the foregoing, particularly the increase in cumulated subject imports during the latter portions of the period of investigation, we find that the volume of cumulated subject imports and the increase in that volume are significant both in absolute terms and relative to consumption in the United States.

D. Price Effects of the Subject Imports

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

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[163]

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. In addition, there are relatively few U.S. purchasers of wind towers.

We have examined several sources of information in our underselling analysis, including pricing data, import purchase cost data, and responses by purchasers to the Commission's lost sales/lost revenue questionnaire survey ("LSLR Survey"). Five U.S. producers provided usable quarterly f.o.b. pricing data for four pricing products,[164] although not all firms reported pricing

[162] CR/PR at Tables IV-7 and C-1. The domestic industry's share of the merchant market was *** percent in 2017 and *** percent in 2018, and then declined to *** percent in 2019; its market share was lower in interim 2020, at *** percent, than in interim 2019 at *** percent. CR/PR at Table C-2.

[163] 19 U.S.C. § 1677(7)(C)(ii).

[164] CR/PR at V-7. The four pricing products are 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-7 and Tables V-3-6.

for all products for all quarters.[165] Reported pricing data account for virtually all of U.S. producers' U.S. shipments of wind towers in 2019.[166]

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.[167] Two importers reported usable import purchase cost data, although not all firms reported purchase costs for all products for all quarters.[168] Purchase cost data reported by these firms accounted for approximately *** percent of subject imports from Malaysia and *** percent of subject imports from Spain in 2019.[169] U.S. importers of subject imports from India did not report purchase cost data.[170]

The record contains 6 instances of quarterly import purchase cost data.[171] The record shows that the purchase costs of cumulated subject imports were lower than the prices for the domestic like product in all *** instances, at cost differentials ranging from *** percent to *** percent.[172] The average differential between import purchase costs and prices for the domestic like product is *** percent.[173] 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 from importing wind towers.[174] Given the 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 these data indicate that the cumulated subject imports were priced lower than the domestic like product.

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[165] CR/PR at V-7.

[166] CR/PR at V-7-8.

[167] CR/PR at V-7-8 and Tables V-3-7. Because cumulated subject imports generally are imported by OEMs for their own use, the Commission did not collect importers' sales price data.

[168] CR/PR at V-7.

[169] CR/PR at V-8.

[170] CR/PR at V-8 and Table V-7.

[171] CR/PR at V-8 & Tables V-3-8.

[172] CR/PR at Table V-8. On a volume basis, there were *** units of cumulated subject imports in quarters in which their purchase costs were lower than the prices for the domestic like product and *** cumulated subject imports with purchase costs higher than the prices for the domestic like product. *Id*.

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

[174] CR/PR at V-8. 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 imported are lower than the price of purchasing wind towers from a U.S. producer or importer. *Id.* Only (***) responded, reporting that its imports were not less expensive than if the firm purchased from U.S. importers or U.S. producers. *Id.*

Confirmed lost sales also indicate that cumulated subject imports were being sold at lower prices than the domestic product during the period of investigation. 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 2017-2019.[175] *** of these *** purchasers reported that cumulated subject import prices were lower than prices of the domestic like product.[176]

During this time, the domestic industry lost *** percentage points of market share to cumulated subject imports from 2018 to 2019 in the total market. Additionally, the domestic industry's market share was *** percentage points lower in interim 2020 than in interim 2019, while cumulated subject imports' share was *** percentage points higher, which shows that the domestic industry incurred additional market share losses to cumulated subject imports into 2020.[177]

The foregoing indicate that cumulated subject imports were frequently available at lower prices than domestically produced wind towers and that the domestic industry lost considerable market share to subject imports in 2019 and into interim 2020. Given the substitutability of the products and the importance of price in purchasing decisions, we find, for purposes of these preliminary determinations, that there has been significant underselling by cumulated subject imports that led to a shift in market share from domestic producers to cumulated subject imports in the latter portions of the period of investigation.[178]

We have also examined available data on price trends. Price trends are difficult to discern based on the pricing data in the preliminary phase of these investigations.[179] In

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[175] CR/PR at Table V-11.

[176] CR/PR at Table V-11. *** of these *** purchasers indicated that price was a primary reason for purchasing *** wind towers from subject countries rather than domestically produced wind towers; this quantity represents approximately *** percent of the *** wind towers that purchasers reported having imported from the cumulated subject countries over the entire period of investigation. *Derived from* CR/PR at Tables V-9 and V-11.

[177] *See* CR/PR at Tables IV-7 and C-1. In the merchant market, the domestic industry lost *** percentage points of market share to cumulated subject imports from 2018 to 2019. *See* CR/PR at Table C-2. Across interim periods, the domestic industry's market share was *** percentage points lower across interim periods to cumulated subject imports' gain. *Id.*

[178] CR/PR at Tables C-1 and C-2.

[179] Based on the current record, prices for only one of the four domestically produced pricing products, Product 1, were reported over the entire period of investigation. CR/PR at Tables V-3-7. The data show that prices of domestically produced wind towers for Product 1 declined by *** percent during January 2017-June 2020. CR/PR at Tables V-3 and V-7. For Product 3, domestic prices declined by *** percent in the period for which data were reported, *i.e.*, from July 2018 until June 2020. *Derived from* CR/PR at Table V-5. Domestic prices for Product 2 declined by *** percent in the period for which (Continued…)

addition, average unit values (AUVs) reflect a wide range of prices for wind towers of differing sizes and specifications, and therefore are of limited use in evaluating price movements.[180] In any final phase of these investigations, we intend to explore further whether cumulated subject imports depressed domestic prices to a significant degree. We invite the parties to provide comments on the Commission's draft questionnaires concerning the appropriate pricing data that the Commission should collect in any final phase of these investigations.[181]

We have also considered whether subject imports have prevented price increases for domestically produced wind towers which otherwise would have occurred to a significant degree. The domestic industry's ratio of COGS to net sales for the total market increased from 86.3 percent in 2017 to 91.8 percent in 2018 before decreasing to 90.3 percent in 2019, for an overall increase of 4.6 percentage points.[182] The domestic industry's ratio of COGS to net sales for the total market was 2.3 percentage points higher in interim 2020, at 93.4 percent, than in interim 2019, at 91.1 percent.[183] Although this interim period increase coincides with a considerable increase in the volume of cumulated subject imports in interim 2020, we observe that the 2017-2019 period increase of *** percentage points is attributable to the increase from 2017 to 2018, when the volume of cumulated subject imports decreased considerably

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data were reported (*i.e.*, January 2017 until December 2019) and domestic prices for Product 4 increased by *** percent in the period for which data were reported (*i.e.*, April 2019-December 2019). *Derived from* CR/PR at Tables V-4 and V-6. For Product 1, subject import purchase costs increased by *** percent in the period for which data were reported, *i.e.*, from January through September 2019. *Derived from* CR/PR at Table V-3. For Product 3, subject import purchase costs for this pricing product declined by *** percent in the period for which data were reported, *i.e.*, from January 2019 until June 2020. No purchase cost data were reported for Products 2 and 4 (CR/PR at Tables V-4 and V-6).

[180] *See* CR/PR at Table V-7 (showing domestic industry prices for the four pricing products ranging from ***). AUVs of shipments of the domestic like product for the total market increased overall by 6.4 percent from 2017 to 2019 and were 6.2 percent higher in interim 2020 than in interim 2019. CR/PR at Table C-1. AUVs of shipments of the domestic like product for the merchant market increased overall by *** percent from 2017 to 2019 and were *** percent higher in interim 2020 than in interim 2019. CR/PR at Table C-2. On a cumulated basis, AUVs for U.S. shipments of subject imports for both the total market and merchant market increased irregularly from 2017 to 2019 and were higher in interim 2020 than in interim 2019. CR/PR at Tables IV-2, C-1, and C-2. AUVs of shipments of cumulated subject imports were consistently below AUVS of shipments of the domestic like product throughout the period of investigation. CR/PR at Tables C-1 and C-2.

[181] *See* 19 C.F.R. § 207.63(b).

[182] CR/PR at Tables VI-3 and C-1. The domestic industry's ratio of COGS to net sales for the U.S. merchant market increased from *** percent in 2017 to *** percent in 2018 and to *** percent in 2019, for an overall increase of *** percentage points. CR/PR at Table C-2.

[183] CR/PR at Tables VI-3 and C-1. The domestic industry's ratio of COGS to net sales for the merchant market was *** percentage points higher in interim 2020, at *** percent, than in interim 2019, at *** percent. CR/PR at Table C-2.

before increasing from 2018 to 2019. As noted above, we intend to explore the factors that may be affecting price movements in any final phase of these investigations.

In sum, the available information on the record in the preliminary phase of these investigations, particularly the purchase cost and lost sales data, indicates that cumulated subject imports significantly undersold domestically produced wind towers. We further find that the significant underselling caused cumulated subject imports to capture market share from the domestic industry during the latter portions of the period of investigation. Accordingly, we find for purposes of these determinations that the cumulated subject imports had significant price effects.

E. Impact of the Subject Imports[184]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry." These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, research and development, 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."[185]

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 28.2 percent from 2017 to 2019,[186] the domestic industry's production, capacity, and U.S. shipments increased by only 4.6 percent, 3.4 percent, and 10.9 percent, respectively, over the same period.[187] While apparent U.S. consumption for

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[184] In its notice initiating the antidumping duty investigations on wind towers from India, Malaysia, and Spain, Commerce reported estimated dumping margins of 54.83 percent for subject imports from India, 93.83 percent for subject imports from Malaysia, and 73.00 percent for subject imports from Spain. *Utility Scale Wind Towers from India, Malaysia, and Spain: Initiation of Less-Than-Fair-Value Investigations*, 85 Fed. Reg. 73023, 73026 (Nov. 16, 2020).

[185] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[186] CR/PR at Tables IV-6, IV-7, and C-1.

[187] The domestic industry's capacity increased from 3,567 towers in 2017 to 3,609 towers in 2018 and 3,687 towers in 2019. CR/PR at Tables III-4 and C-1. Its production declined from 2,767 towers in 2017 to 2,672 towers in 2018, but then increased to 2,895 towers in 2019. *Id*. By quantity, (Continued…)

the total market was 17.3 percent higher in interim 2020 than in interim 2019,[188] the domestic industry's production, capacity, and U.S. shipments were higher in interim 2020 than in interim 2019 by only 3.1 percent, 2.3 percent, and 6.4 percent, respectively.[189] [190] The domestic industry's capacity utilization increased overall by 0.9 percentage points from 2017 to 2019, while its capacity utilization was 0.6 percentage points higher in interim 2020 than in interim 2019.[191] The domestic industry's share of apparent U.S. consumption for the total market declined overall from 2017 to 2019, with a *** percentage point decrease from 2018 to 2019.[192] The industry's share of apparent U.S. consumption for the total market was *** percentage points lower in interim 2020 than in interim 2019.[193] [194]

U.S. producers' U.S. shipments increased from 2,673 towers in 2017 to 2,698 towers in 2018, and 2,964 towers in 2019. CR/PR at Tables III-6 and C-1.

[188] CR/PR at Tables IV-6, IV-7, and C-1.

[189] The domestic industry's production was 1,457 towers in interim 2019 and 1,502 towers in interim 2020. CR/PR at Tables III-4 and C-1. Its capacity was 1,884 towers in interim 2019 and 1,927 towers in interim 2020. *Id*. By quantity, U.S. producers' U.S. shipments were 1,447 towers in interim 2019 and 1,540 towers in interim 2020. CR/PR at Tables III-6 and C-1.

[190] AWEA and Vestas argue that the domestic industry did not have available capacity to meet U.S. demand for wind towers during the period of investigation. *See e.g.*, AWEA Postconf. Br. at 12; Vestas Postconf. Br. at 2-3. Data on the record indicate that the domestic industry maintained available domestic capacity on an overall basis over the investigation period. In any final phase of these investigations, we intend to further explore allegations of supply constraints in the market and any resulting impact on price movements and cumulated subject import volumes.

[191] The domestic industry's capacity utilization was 77.6 percent in 2017, 74.0 percent in 2018, and 78.5 percent in 2019; its capacity utilization was 77.3 percent in interim 2019 and 77.9 percent in interim 2020. CR/PR at Tables III-4 and C-1.

[192] The domestic industry's share of apparent U.S. consumption for the total market was *** percent in 2017 and *** percent in 2018, but then declined to *** percent in 2019. CR/PR at Tables IV-7 and C-1. The domestic industry's share of apparent U.S. consumption for the merchant market was *** percent in 2017 and *** percent in 2018, but then declined to *** percent in 2019. CR/PR at Table C-2.

[193] The domestic industry's share of apparent U.S. consumption for the total market was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Tables IV-7 and C-1. The domestic industry's share of apparent U.S. consumption for the merchant market was *** percent in interim 2019 and *** percent in interim 2020. CR/PR at Table C-2.

[194] U.S. producers' end-of-period inventories declined by *** percent from 2017 to 2019, declining from *** towers in 2017 to *** towers in 2018 and *** towers in 2019. CR/PR at Tables III-8 and C-1. U.S. producers' end-of-period inventories were *** percent lower in interim 2020, at *** towers, than in interim 2019, at *** towers. *Id*.

The domestic industry's employment indicia were mixed. The number of production workers[195] and hourly wages[196] fluctuated between years but decreased overall from 2017 to 2019. Productivity fluctuated but remained unchanged overall from 2017 to 2019.[197] Wages paid and total hours worked fluctuated between years but increased overall from 2017 to 2019.[198]

Most of the domestic industry's financial performance indicia declined over the course of the period of investigation. The domestic industry's gross profit,[199] operating income,[200] and net income[201] declined overall from 2017 to 2019 and were all lower in interim 2020 than in

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[195] Employment decreased overall by 2.0 percent from 2017 to 2019, declining from 2,287 production-related workers ("PRWs") in 2017 to 2,085 PRWs in 2018, before increasing to 2,183 PRWs in 2019. Employment was higher in interim 2020 at 2,349 PRWs than in interim 2019 at 2,027 PRWs. CR/PR at Tables III-10 and C-1.

[196] Hourly wages declined overall by 4.2 percent from 2017 to 2019, increasing from $35.16 per hour in 2017 to $36.66 per hour in 2018, before declining to $33.69 per hour in 2019. Hourly wages were higher in interim 2020, at $25.92, than in interim 2019, at $25.73. CR/PR at Tables III-10 and C-1.

[197] Productivity (in towers per 10,000 hours) increased from 5.9 towers in 2017 to 6.2 towers in 2018, before declining to 5.9 towers in 2019. Productivity was lower in interim 2020 at 4.5 towers than in interim 2019 at 5.0 towers. CR/PR at Tables III-10 and C-1.

[198] Wages paid increased overall by 0.3 percent from 2017 to 2019, declining from $164.3 million in 2017 to $156.7 million in 2018, before increasing to $164.9 million in 2019. Wages paid were higher in interim 2020 at $86.8 million than in interim 2019 at $74.4 million. Total hours worked increased overall by 4.7 percent from 2017 to 2019, declining from 4.7 million hours in 2017 to 4.3 million hours in 2018, before increasing to 4.9 million hours in 2019. Total hours worked were higher in interim 2020, at 3.3 million hours, than in interim 2019, at 2.9 million hours. CR/PR at Tables III-10 and C-1.

[199] CR/PR at Table VI-3. The domestic industry's gross profit in the total market declined overall by 21.9 percent from 2017 to 2019, declining from $115.9 million in 2017 to $70.2 million in 2018, before increasing to $90.5 million in 2019. *Id*. Its gross profit in the total market was lower in interim 2020 at $35.0 million than in interim 2019 at $41.9 million. *Id.* In the merchant market, the domestic industry's gross profit declined overall by *** percent, declining from $*** in 2017 to $*** in 2018, before increasing to $*** in 2019. CR/PR at Table C-2. Its gross profit in the merchant market was lower in interim 2020 at $*** than in interim 2019 at $***. *Id.*

[200] CR/PR at Table VI-3. The domestic industry's operating income in the total market declined overall by 29.0 percent from 2017 to 2019, declining from $87.8 million in 2017 to $44.9 million in 2019, before increasing to $62.4 million in 2019. *Id*. Its operating income in the total market was lower in interim 2020 at $21.5 million than in interim 2019 at $28.2 million. *Id*. In the merchant market, the domestic industry's operating income declined overall by *** percent from 2017 to 2019, decreasing from $*** in 2017 to $*** in 2018, before increasing to $*** million in 2019. CR/PR at Table C-2. Its operating income in the merchant market was lower in interim 2020 at $*** than in interim 2019 at $***. *Id.*

[201] CR/PR at Table VI-3. The domestic industry's net income in the total market declined overall by 32.9 percent from 2017 to 2019, declining from $85.0 million in 2017 to $50.9 million in 2019, before increasing to $57.1 million in 2019. *Id*. Its net income in the total market was lower in interim 2020 at $22.1 million than in interim 2019 at $25.4 million. *Id*. In the merchant market, the domestic industry's (Continued…)

interim 2019. Both operating income and net income as a share of net sales also declined overall from 2017 to 2019 and were lower in interim 2020 than in interim 2019.[202] The domestic industry's net sales revenue and unit net sales value, however, both increased overall from 2017 to 2019 and were higher in interim 2020 than in interim 2019.[203]

Domestic producers' capital expenditures declined by 58.5 percent from 2017 to 2019, and were lower in interim 2020 than in interim 2019.[204] Domestic producers also reported negative effects on investment and on growth and development due to subject imports.[205]

The record in the preliminary phase of these investigations indicates that cumulated subject imports that were good substitutes for the domestic like product entered the U.S.

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net income declined overall by *** percent from 2017 to 2019, decreasing from $*** in 2017 to $*** in 2018 and $*** in 2019. CR/PR at Table C-2. Its net income in the merchant market was lower in interim 2020 at $*** than in interim 2019 at $***. *Id.*

[202] CR/PR at Table VI-3. The domestic industry's operating income as a share of net sales in the total market declined overall by 4.1 percentage points from 2017 to 2019, declining from 10.4 percent in 2017 to 5.2 percent in 2018, before increasing to 6.3 percent in 2019. *Id*. Its operating income as a share of net sales was lower in interim 2020 at 4.0 percent than in interim 2019 at 6.0 percent. *Id*. The domestic industry's operating income as a share of net sales in the merchant market declined by *** percentage points overall from 2017 to 2019, declining from *** percent in 2017 to *** percent in 2018, before increasing to *** percent in 2019. CR/PR at Table C-2. Its operating income as a share of net sales in the merchant market was lower in interim 2020 at *** percent than in interim 2019 at *** percent. *Id*.

The domestic industry's net income as a share of net sales in the total market declined overall by 4.3 percentage points from 2017 to 2019, declining from 10.1 percent in 2017 to 5.9 percent in 2018 and 5.7 percent in 2019. *Id*. Its net income as a share of net sales was lower in interim 2020 at 4.2 percent than in interim 2019 at 5.4 percent. *Id.* The domestic industry's net income as a share of net sales in the merchant market declined by *** percentage points overall from 2017 to 2019, declining from *** percent in 2017 to *** percent in 2018 and *** percent in 2019. CR/PR at Table C-2. Its net income as a share of net sales in the merchant market was lower in interim 2020 at *** percent than in interim 2019 at *** percent. *Id*.

[203] CR/PR at Tables VI-3, C-1, and C-2. As discussed above, apparent U.S. consumption in the total market increased overall by 28.2 percent from 2017 to 2019 and was 17.3 percent higher in interim 2020 than in interim 2019. CR/PR at Tables IV-6, IV-7, and C-1. The domestic industry's net sales (by value) in the total market increased overall by 18.0 percent from 2017 to 2019, increasing from $843.6 million in 2017 to $859.6 million in 2018 and $995.1 million in 2019. CR/PR at Tables VI-3 and C-1. Its net sales (by value) in the total market was 13.0 percent higher in interim 2020 at $531.7 million than in interim 2019 at $470.6 million. *Id*. In the merchant market, the domestic industry's commercial sales (by value) increased overall by *** percent from 2017 to 2019, declining from $*** in 2017 to $*** in 2018, before increasing to $*** in 2019. CR/PR at Table C-2. Its commercial sales (by value) in the merchant market were *** percent higher in interim 2020 at $*** than in interim 2019 at $***. *Id*.

[204] CR/PR at Tables VI-4 and C-1. The domestic industry's capital expenditures declined from $41.8 million in 2017 to $26.7 million in 2018 and $17.3 million in 2019. *Id*. Its capital expenditures were lower in interim 2020 at $7.3 million than in interim 2019 at $9.9 million. *Id.*

[205] CR/PR at Tables VI-7-8.

market in significant and increasing volumes during the period of investigation. These cumulated subject imports significantly undersold the domestic like product and gained market share at the expense of the domestic industry during the latter portions of the period of investigation. The domestic industry's production employment-related indicators generally did not keep pace with increases in apparent U.S. consumption, and its financial condition generally worsened. In light of these considerations, we find that cumulated subject imports caused the domestic industry's output and revenues to be appreciably lower than they would have been otherwise. Accordingly, for purposes of these preliminary determinations, we find that the cumulated subject imports had a significant adverse impact on the domestic industry.

We also have considered whether there are other factors that may have had an impact on the domestic industry to ensure that we are not attributing injury from such other factors to subject merchandise. Since apparent U.S. consumption increased sharply during the latter portions of the period of investigation,[206] demand trends do not explain the declines in the domestic industry's financial performance, nor do they explain the industry's inability to achieve materially greater output. In addition, although there was a substantial volume of nonsubject imports in the market throughout the period of investigation and these imports gained market share from 2017 to 2019,[207] this does not negate the fact that the volume of cumulated subject imports also increased and took market share directly at the expense of the domestic industry during 2018-2019.[208] From 2018 to 2019, the domestic industry lost a comparable, indeed slightly greater, amount of market share to cumulated subject imports than it lost to nonsubject imports.[209] In the interim period, nonsubject imports' market share for the total market was *** percentage points lower in interim 2020, at *** percent, than in interim 2019, at *** percent, while cumulated subject imports' market share for the total

[206] Apparent U.S. consumption in the total market for wind towers increased from 3,746 towers in 2017 to 3,752 towers in 2018 and 4,804 towers in 2019. CR/PR at Tables IV-7 and C-1. Apparent U.S. consumption in the total market for wind towers was higher in interim 2020, at 2,747 towers, than in interim 2019, at 2,342 towers. *Id*. Apparent U.S. consumption of wind towers in the merchant market declined from *** towers in 2017 to *** towers in 2018, but then increased to *** towers in 2019. CR/PR at Table C-2. Apparent U.S. consumption in the merchant market was higher in interim 2020 at *** towers than in interim 2019 at *** towers. *Id*.

[207] CR/PR at Tables C-1 and C-2.

[208] Nonsubject imports' share of apparent U.S. consumption for the total market increased from *** percent in 2017 to *** percent in 2018 and *** percent in 2019. CR/PR at Table C-1. Nonsubject imports' share of apparent U.S. consumption for the merchant market increased from *** in 2017 to *** percent in 2018 and *** percent in 2019. CR/PR at Table C-2. As noted above, cumulated subject imports also gained *** percentage points of market share from 2018 to 2019 in the total market and *** percentage points in the merchant market. CR/PR at Tables C-1 and C-2.

[209] CR/PR at Tables C-1 and C-2.

market was *** percentage points higher in interim 2020, at *** percent, than in interim 2019, at *** percent.[210] Nonsubject imports therefore cannot fully explain the domestic industry's loss of market share and declining financial performance in 2019 and into 2020.

VII. Conclusion

For the reasons stated above, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of subject imports of wind towers from India, Malaysia, and Spain that are allegedly sold in the United States at less than fair value and allegedly subsidized by the governments of India and Malaysia.

[210] CR/PR at Table C-1. Nonsubject imports' market share for the merchant market was *** percentage points lower in interim 2020, at *** percent, than in interim 2019, at *** percent. CR/PR at Table C-2. Cumulated subject imports' market share for the merchant market was *** percentage points higher in interim 2020, at *** percent, than in interim 2019, at *** percent. *Id.*

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 and less-than-fair-value ("LTFV") imports of utility scale wind towers ("wind towers")[1] from India, Malaysia, and Spain. The following tabulation provides information relating to the background of these investigations.[2] [3]

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)
October 21, 2020	Commission's conference
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 1, 2020	Commission's vote
December 4, 2020	Commission's determinations
December 11, 2020	Commission's views

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

Statutory criteria

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

> *shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.*
>
> *Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that*[4]*--*
>
> *In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.. . .In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.*

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

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

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

Organization of report

Part I of this report presents information on the subject merchandise, alleged 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, and Vestas, while leading producers of wind towers in India, Malaysia, and Spain include ***. Four wind-turbine original equipment manufacturers ("OEMs") *** that import/purchase wind towers accounted for nearly all wind turbine installations in 2019. The leading U.S. importer of wind towers from India in 2019 was ***. The leading U.S. importers of wind towers from Malaysia were *** and the leading U.S. importers of wind towers from Spain were ***. Leading importers of wind towers from nonsubject countries were ***.

[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 *** units ($***) in 2019. Currently, six firms are known to produce wind towers in the United States. U.S. producers' U.S. shipments of wind towers totaled 2,964 units ($995.1 million) in 2019, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled *** units ($***) in 2019 and U.S. shipments of such imports accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled *** units ($***) in 2019 and U.S. shipments of such imports accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, tables C-1 and C-2. 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 2019. U.S. imports are based on questionnaire responses of six firms that accounted for the vast majority of subject imports in 2019. Foreign producer data are based on questionnaires responses of five firms that accounted for the vast majority of production in India and Spain and all known 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

[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.

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 Towers) alleging that an industry in the United States was materially injured and threatened 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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[7] 84 FR 20164, May 8, 2019.

[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 alleged subsidies and sales at LTFV

Alleged subsidies

On November 16, 2020, Commerce published a notice in the *Federal Register* of the initiation of its countervailing duty investigation on wind towers from India.[11] Commerce identified the following government programs in India:

A. Government of India Subsidy Programs

1. Advance Authorization Program (AAP)
2. Duty-Free Import Authorization Scheme (DFIA)
3. Duty Drawback Program (DDB)
4. Export-Oriented Unit (EOU) Scheme
    a) Duty-free Imports of Goods, Including Capital Goods and Raw Materials
    b) Reimbursement of Central Sales Tax (CST) Paid on Goods Manufactured in India
    c) Duty-Drawback on Fuel Procured from Domestic Oil Companies
    d) Exemption from Payment of Central Excise Duty on Good Manufactured in India and Procured through a Domestic Tariff Area
5. Export Promotion of Capital Goods Scheme (EPCGS)
6. Merchandise Export Incentive Scheme (MEIS)
7. Interest Equalization Scheme (IES)
8. Status Holder Incentive Scheme (SHIS)
9. Pre-Shipment and Post-Shipment Export Financing
10. Market Development Assistance Program
11. Market Access Initiative
12. Focus Product Scheme
13. Status Certificate Program
14. Income Deduction Program ("80-IB Tax Program")
15. Special Economic Zones (SEZs)
    a) Duty-Free Importation of Capital Goods and Raw Materials, Components, Consumables, Intermediates, Spare Parts, and Packing Material
    b) Exemption from Payment of Central Sales Tax (CST) on Purchases of Capital Goods and Raw Materials, Components, Consumables, Intermediates, Spare Parts, and Packing Material

[11] 85 FR 73019, November 16, 2020.

c) Exemption from Electricity Duty and Cess on the Sale or Supply of Electricity to the SEZ Unit
d) Unit SEZ Income Tax Exemption Scheme (10A)
e) National Service Tax Exemption

16. Incremental Exports Incentive Scheme (IEIS)
17. Income Tax Deductions for Research and Development Expenses
18. Deduction Under Section 32-AC of the Income Tax Act
19. Provision of Cut-to-Length Steel Plate for Less than Adequate Remuneration (LTAR)

B. State Government of Andhra Pradesh (SGAP) Subsidy Programs

20. Subsidies under the SGAP Industrial Investment Promotion Policy
    a) Grant Under the Industrial Investment Promotion Policy: 25 Percent Reimbursement of the Cost of Land in Industrial Estates and Development Areas
    b) Grant Under the Industrial Investment Promotion Policy: Reimbursement of Power at the Rate of Rupee (Rs.) 0.75 per Unit
    c) Grant Under the Industrial Investment Promotion Policy: 50 Percent Subsidy for Expenses Incurred for Quality Certification
    d) Grant Under the Industrial Investment Promotion Policy: 50 Percent Subsidy on Expenses Incurred in Patent Registration
    e) Grant Under the Industrial Investment Promotion Policy: 25- or 35- Percent Subsidy for Cleaner Production Measures
    f) Tax Incentives Under the Industrial Investment Promotion Policy: 100 Percent Reimbursement of Stamp Duty and Transfer Duty Paid for the Purchase of Land and Buildings and the Obtaining of Financial Deeds and Mortgages
    g) Tax Incentives Under the Industrial Investment Promotion Policy: Reimbursement on Value Added Tax (VAT), Central Sales Tax (CST), and State Taxes on Goods and Services (SGST)
    h) Tax Incentives Under the Industrial Investment Promotion Policy: Exemption from SGAP Non-Agricultural Land Assessment
    i) Provision of Goods and Services for LTAR and Grants Under the Industrial Investment Promotion Policy: Provision of Infrastructure for Industries Located More Than 10 Kilometers from Existing Industrial Estates or Development Areas

42. SGOK's New Industrial Policy and Package of Incentives and Concession of 2006 (2006 KIP): Loans

F. State Government of Utter Pradesh (SGUP) Subsidy Programs

43. SGUP Long-Term Interest Free Loans Equivalent to the Amount of VAT and CST Paid
44. The SGUP's Interest-Free Loans Under the SGUP Industrial Development Promotion Rules 2003

G. State Government of Tamil Nadu (SGTN) Subsidy Programs

45. Land Reservations for Micro Enterprises in Tamil Nadu Small Industries Development Corporation Ltd. (TANSIDCO) Industrial Estates and Micro, Small and Medium Enterprises in State Industries Promotion Corporation of Tamil Nadu Ltd. (SIPCOT) Industrial Estates
46. Infrastructure Subsidy for Privately Developed Industrial Estates
47. Rebate on Stamp Duty and Registration Charges for Privately Developed Industrial Estates
48. Capital Subsidy
49. Low Tension Power Tariff Subsidy
50. Reimbursement of Assessed VAT on Plant and Machinery
51. Stamp Duty Exemption on Mortgaged and Pledged Documents
52. Employment Intensive Subsidy
53. Generator Subsidy

On November, Commerce published a notice in the *Federal Register* of the initiation of its countervailing duty investigation on wind towers from Malaysia.[12] Commerce identified the following government programs in Malaysia:

1. East Coast Economic Region (ECER)/Industrial Zone – Land for Less than Adequate Renumeration (LTAR) Program
2. ECER/Industrial Zone - Provision of Electricity for LTAR
3. ECER/Industrial Zone - Exemption of Import Duties And Sales Taxes for Imported Raw Materials, Spare Parts/Accessories, and Machinery
4. Pioneer Status Direct Tax Incentives
5. Preferential Financing from the Malaysia Development Bank (MDB)
6. High Impact Fund Grant

[12] 85 FR 73019, November 16, 2020.

7. Upstream Subsidization of Malaysian Cut-to-Length (CTL) Plate Producers by the GOM

Alleged sales at LTFV

On November 16, 2020, Commerce published a notice in the *Federal Register* of the initiation of its antidumping duty investigations on product from India, Malaysia, and Spain.[13] Commerce has initiated antidumping duty investigations based on estimated dumping margins of 54.03 percent for wind towers from India, 93.83 percent for wind towers from Malaysia, and 73.00 percent for product from Spain.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[14]

> *The merchandise covered by these investigations 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 nonsubject merchandise, such as nacelles or rotor blades, and whether or not they have internal or external components attached to the subject merchandise.*

[13] 85 FR 73023, November 16, 2020.
[14] Ibid.

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.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to this investigation is imported under the following provisions of the Harmonized Tariff Schedule of the United States ("HTS"): statistical reporting numbers 7308.20.0020 or 8502.31.0000 of the Harmonized Tariff Schedule of the United States ("HTSUS" or "HTS"). The 2020 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) has a column 1-general duty rate of "Free," and HTS subheading 8502.31.00 (covering wind-powered generating sets) has a column 1-general duty rate of 2.5 percent ad valorem. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Section 301 proceedings[15]

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.

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

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 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[16]

Products classifiable under the HTS subheadings of chapter 73 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.

[16] Unless otherwise noted, this information is based on Publication 5101, pp. I-15-I-24. Credits for pictures were retained.

The product

Description and applications[17]

Wind towers are a component of wind turbines. Wind turbines, whether designed for onshore or offshore electric-power generation,[18] 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.[19] The nacelle is mounted on top of the tower, which is typically of tubular-shaped steel in utility-scale wind turbines (figure I-1).

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

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

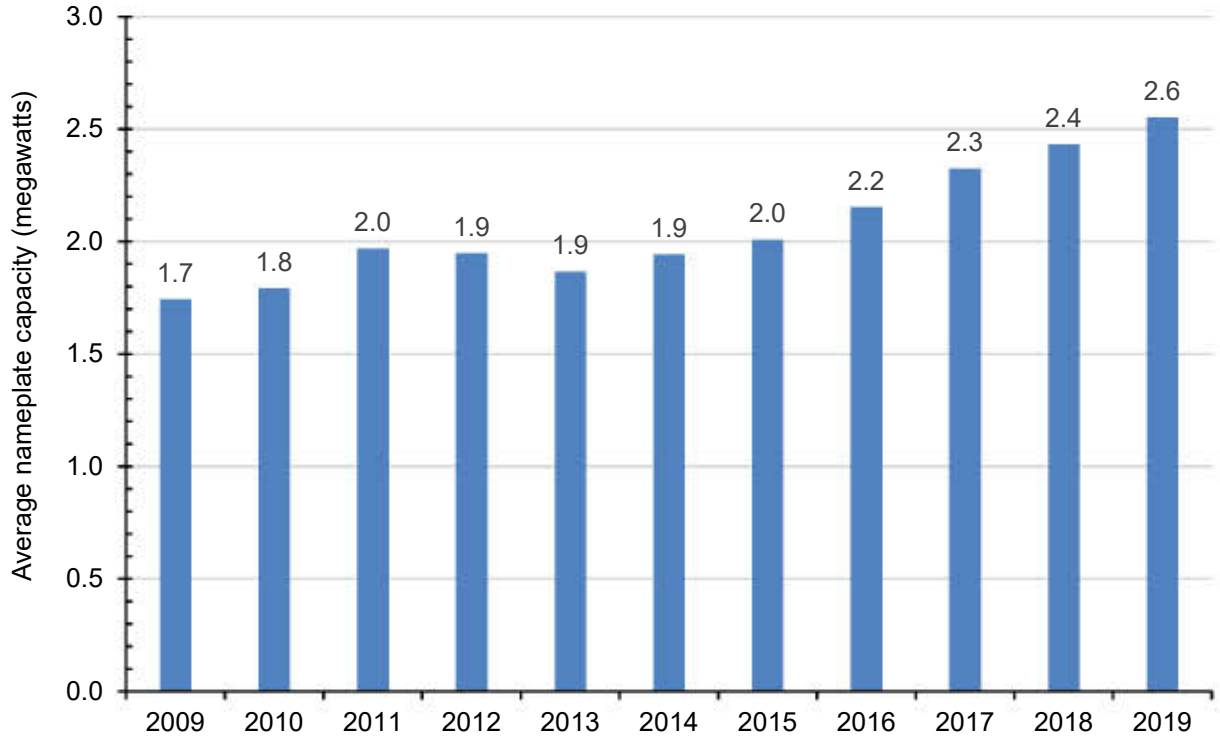
[17] Unless otherwise noted, this information is based on Publication 5101, pp. I-15-I-24.

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

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

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.[20] 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).

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



Source: 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 2020, data file, https://emp.lbl.gov/wind-technologies-market-report, retrieved October 19, 2020.

[20] 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 October 19, 2020.

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."[21] Installations of wind turbines for electric-power utilities and independent power producers[22] 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.

Utility-scale wind turbines generally use tubular steel towers that consist of multiple (base, one or more mid, and top) sections.[23] 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).[24] 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.[25] For the typical structures and internals for each tower section, see figure I-4.

[21] U.S. Energy Information Administration, Wind Explained: Where Wind Power is Harnessed, March 24, 2020, https://www.eia.gov/energyexplained/wind/where-wind-power-is-harnessed.php, retrieved October 22, 2020.

[22] 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.

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

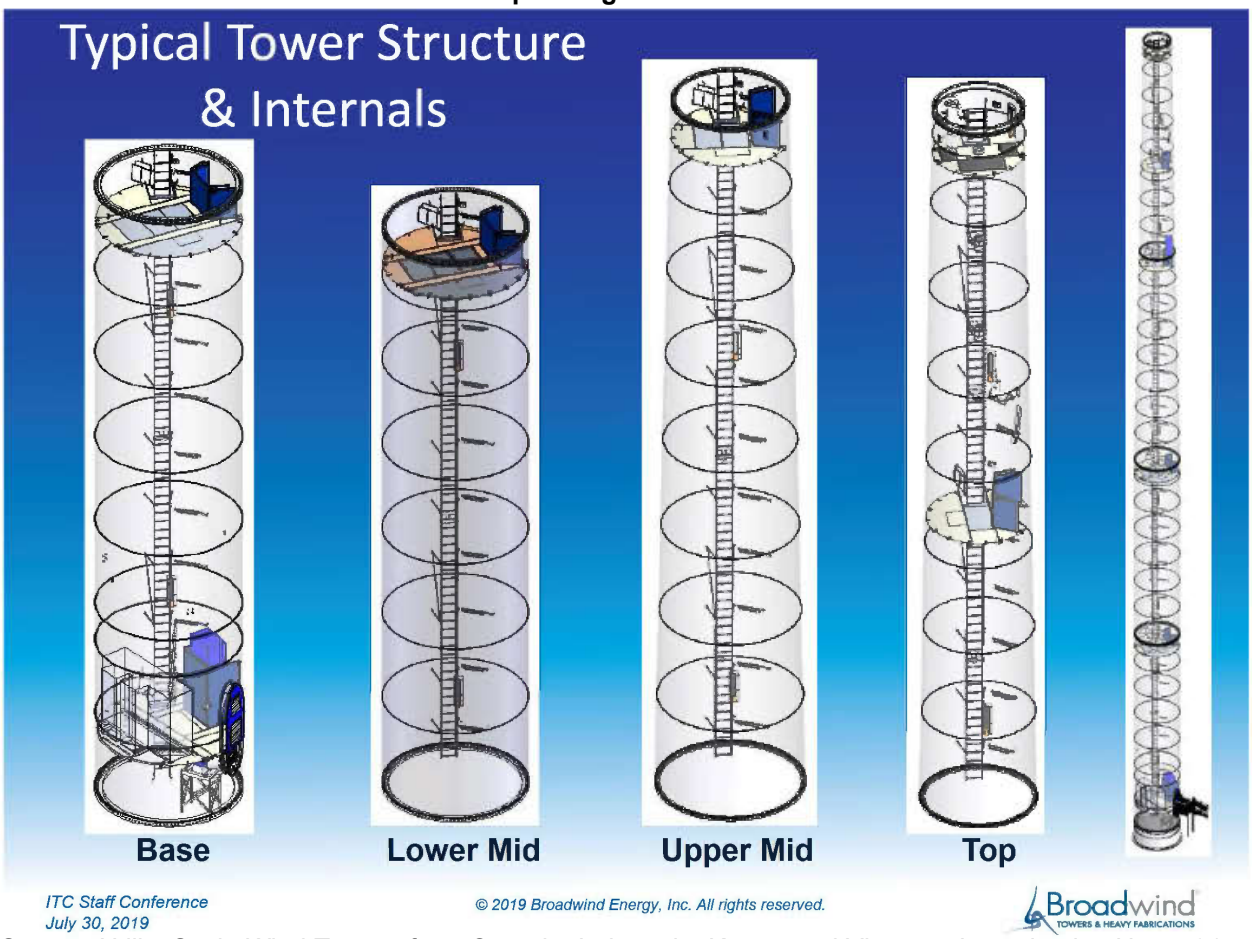
[24] Petition, p. 11.

[25] 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.[26] 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 substantially increased (figure I-5). Taller towers offer advantages by accommodating longer blades[27] that can capture more energy[28] from the higher

[26] 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.

[27] 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.

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

and more constant wind speeds occurring at higher altitudes,[29] often with less turbulence which promotes longer service lifespans and lower operating and maintenance costs from the lower system loads on the turbine.[30]

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 October 19, 2020.

[29] Petition, p. 10; exh. I-12: Office of Energy Efficiency and Renewable Energy, *The Inside of a Wind Turbine*, p. 62.

[30] Miceli, Francesco, "Wind Turbine Towers – the Bigger the Better," June 1, 2017, http://www.windfarmbop.com/tag/concrete-tower/.

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 and height of wind turbines. These include concrete (constructed on-site from segments either cast in-situ or assembled from precast, reinforced panels),[31] hybrid (with both concrete and steel sections),[32] and space frame (steel lattice towers with five legs covered with an architectural fabric)[33] towers.

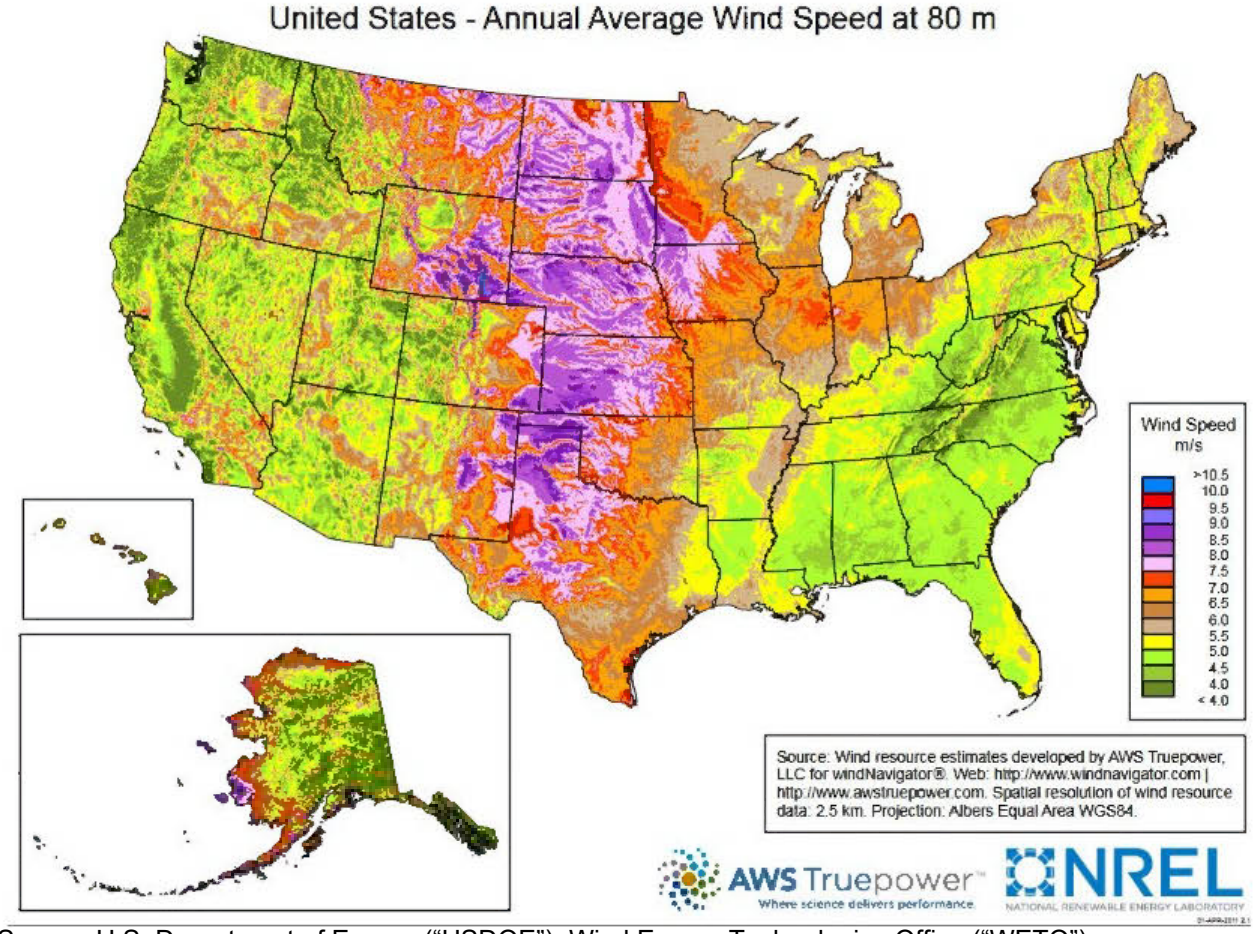
The installed generating capacity of U.S. wind turbines (totaling 107,319 MW in first-quarter 2020) is concentrated between the Rocky Mountains and the Mississippi River— the "Wind Corridor"— where average annual wind speeds at an altitude of 80 meters (262 feet) are the fastest across the continental United States (figure I-6). Texas is the leading state, with 29,407 MW of installed capacity, about three times as much as the next two-highest states, Iowa (with 10,664 MW) and Oklahoma (with 8,173 MW) (figure I-7). Of the 41 states with installed wind power generating capacity, 19 have cumulative capacities exceeding 1,000 MW.

[31] 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.

[32] 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/.

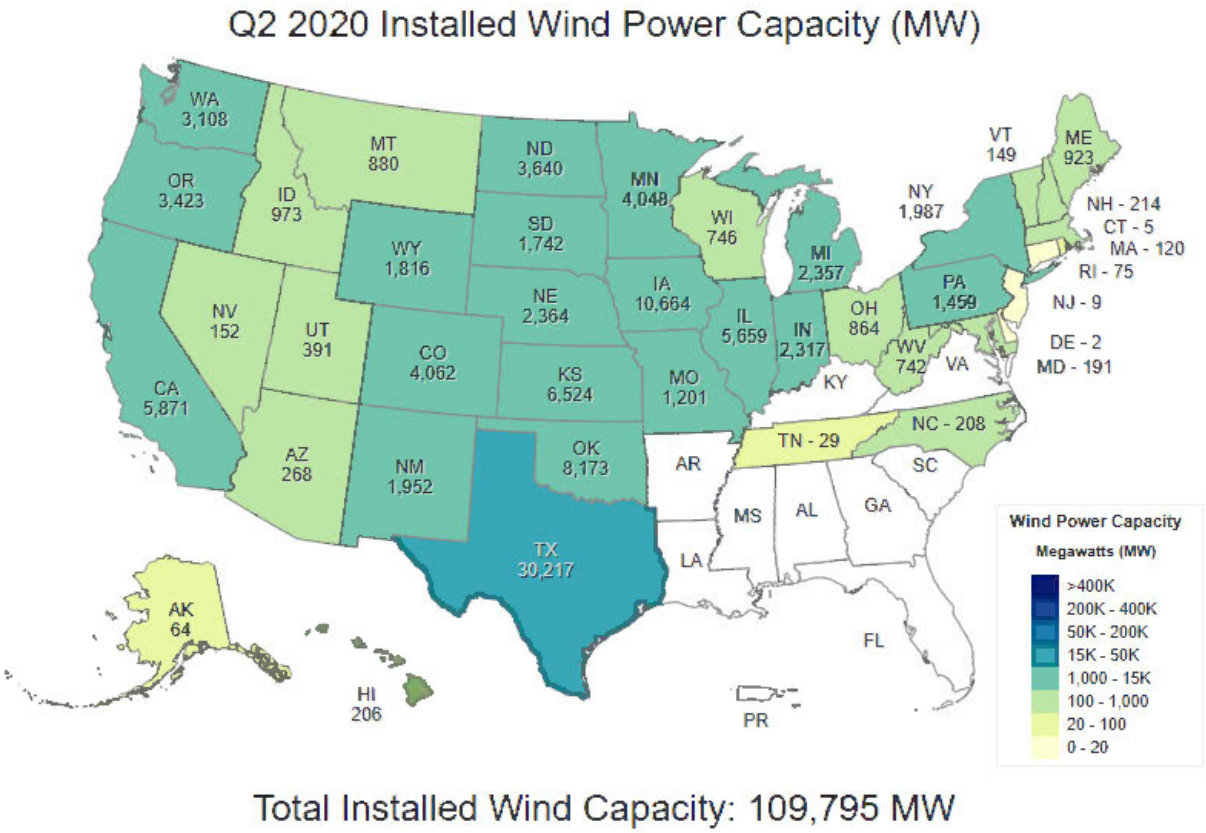
[33] Trabish, Herman K., "Photos: Is GE's Space Frame Tower the Future of Wind Power?," March 7, 2014, https://www.greentechmedia.com/articles/read/is-ges-space-frame-wind-turbine-tower-the-future-of-wind-power.

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 October 22, 2020.

Figure I-7
Wind towers: U.S. installed wind power capacity by state, second-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 October 22, 2020.

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, currently represents all U.S. operating offshore capacity.[34] [35] 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.[36] At the end of 2018, 25,824 MW[37] of offshore wind power-generation projects were in various planning stages, site leasing, permitting, or electric-power sale offtake agreement negotiations.[38] Project sites are located

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[34] 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.

[35] 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 October 19, 2020; "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.

[36] 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.

[37] 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.

[38] Ibid., p. 12.

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.[39]

Manufacturing processes[40]

Wind-turbine OEMS are generally the purchasers of wind towers. Wind towers are produced to each OEM's proprietary specifications to support its nacelle.[41] Each wind-turbine OEM usually has multiple tower designs that function optimally with different wind classes and site conditions.[42] 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 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, 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 typically meets either European specifications (e.g., S355J2 or S355N) or U.S.-equivalent specifications (e.g., ASTM A709 or A572).[43]

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.

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[39] 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.

[40] 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.

[41] Petition, p. 11.

[42] Siemens Gamesa, "Onshore wind turbines," https://www.siemensgamesa.com/en-int/products-and-services/onshore, retrieved November 12, 2020; GE Renewable Energy, "Onshore wind farm technology," https://www.ge.com/renewableenergy/wind-energy/onshore-wind, retrieved November 11, 2020; and Vestas, "Product Portfolio," https://www.vestas.com/en/products#!, retrieved November 12, 2020.

[43] Petition, p. 11.

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.[44]

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 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.

[44] 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.

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"),[45] usually located directly adjacent to its manufacturing facility, for pick-up by the wind-turbine OEM customer.[46] Transporting the individual tower sections, nacelles, hub, and blades for subsequent assembly at the wind project site is usually arranged by the OEM customer.[47] 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 can be contracted to perform long-term turbine maintenance.

Transportation is a significant 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.[48] [49] Tower sections are usually transported by truck to get towers to remote project sites that other transportation modes does not reach.[50] Some of the largest tower sections that are too large to be transported by rail are transported by truck or by ship (vessel) and barges.[51] Due to their sheer size (and fragility of nacelles and blades), there are highly complicated logistical considerations

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[45] 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.

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

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

[48] 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 October 22, 2020.

[49] 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.

[50] 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 October 22, 2020.

[51] 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. It is common sea transportation is very efficient and thus less expensive than land transportation. But I think in this case it is more important than normal. So you may want to think about how to explain this better.

and hazards for transporting individual tower sections and other components.[52] 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 diameters exceeding 4 meters (13 feet), road transit can require up to eight oversized loads for a single tower.[53]

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.

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

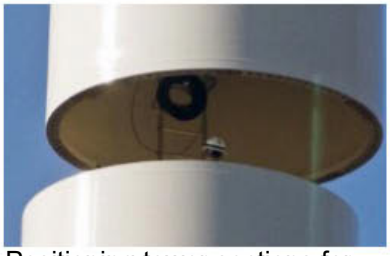
[53] Mooney, Meghan, and Galen Maclaurin, Transportation of Large Wind Components, National Renewable Energy Laboratory ("NERL"), September 2016, p. 3, https://www.nrel.gov/docs/fy16osti/67014.pdf, retrieved October 22, 2020.

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").[54] [55] 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).[56] 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.[57] Tubular monopole offshore wind towers are easier to install in shallow to medium water depths.[58] 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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[54] 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.

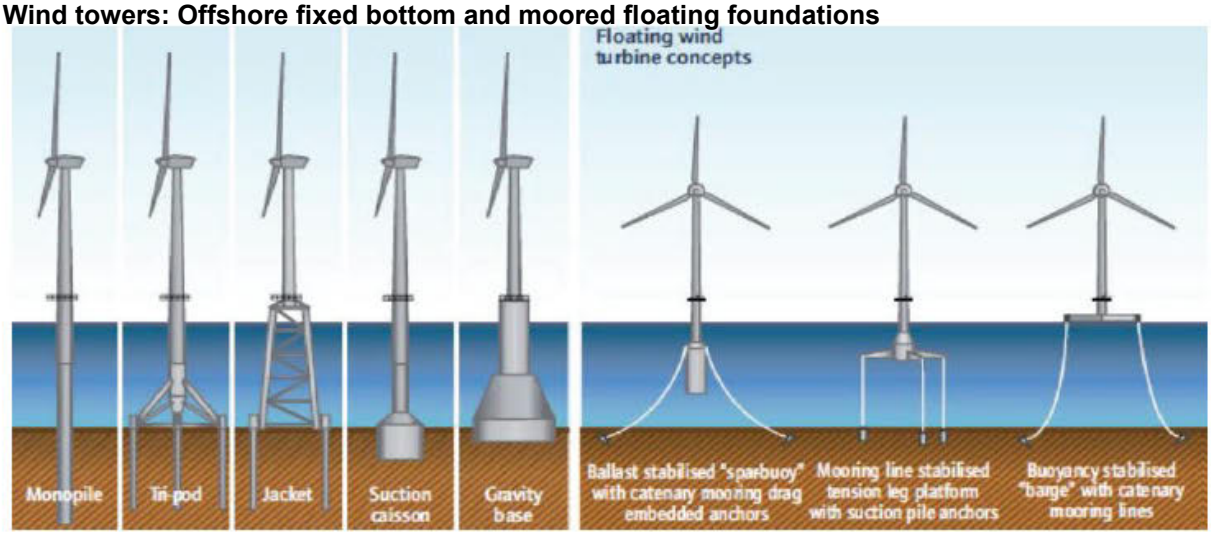
[55] The height of onshore wind towers ranges from 60 meters (197 feet) to 100 meters (328 feet) as measured from the base of the tower to the hub.

[56] 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.

[57] 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.

[58] 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



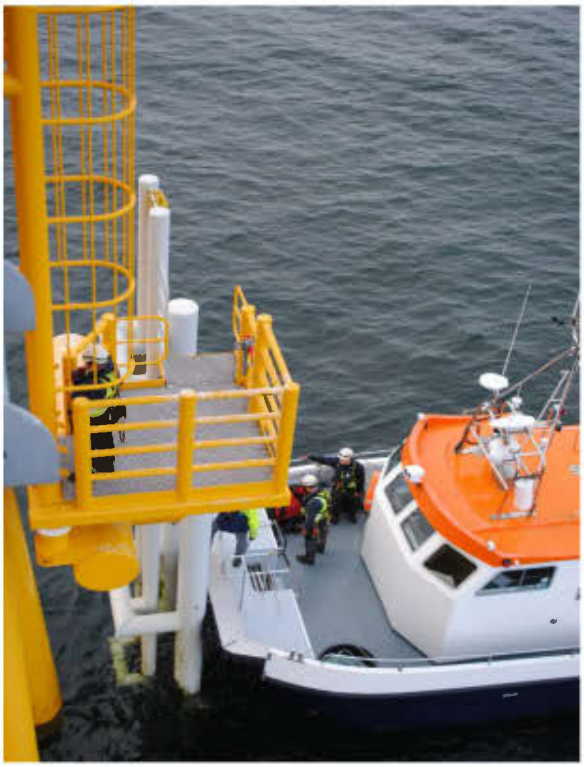
Fixed-bottom foundations Moored floating foundations

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

The petitioner contends that wind towers constitute a single like product co-extensive with the scope of these investigations.[59] Respondent parties did not address the issue of domestic like product in these preliminary phase investigations.

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

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

U.S. market characteristics

Background

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 (***). Each wind turbine manufacturer typically uses 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 trends for wind-generated electric power.

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. According to importers, transportation costs are an important purchasing factor.

Apparent U.S. consumption of wind towers (by number of towers) increased by *** percent during 2017-19. It was *** percent higher in January-June 2020 than in January-June 2019.

Market structure

Wind turbine manufacturers purchase U.S.-produced wind towers, import wind towers themselves, and sometimes buy from unrelated importers. Thus, wind tower sourcing decisions often involve whether to purchase from U.S. wind tower producers and/or to import from foreign producers of wind towers.

Four wind-turbine manufacturing firms (***) accounted for nearly all purchases and imports of wind towers in the United States.[2] The fifth such firm,

[1] Publication 5101, p. II-1.

[2] See import data in Part IV, and customers listed in U.S. producers' questionnaires.

***. These U.S. wind turbine manufacturers sell wind turbines to a project market (utilities and developers) with many downstream purchasers.[3]

Channels of distribution

In the previous related investigations on wind towers from Canada, Indonesia, Korea, and Vietnam, U.S. producers and importers of wind towers reported that all of their shipments during 2017-19 were to end users.[4] Petitioners report that all sales are to OEM and that there are no distributors.[5]

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, 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). U.S. producers reported selling wind towers to all regions in the contiguous United States except the Lower Southeast. Over half the shipments of U.S. wind towers between 2017 and the first half of 2020 were to the Lower Midwest and the Central Southwest. Additionally, and over 90 percent of reported shipments were to four regions: the Lower Midwest; the Central Southwest; the Upper Midwest; and Mountains.[6] Importers reported selling imports from India and Malaysia only to the lower Midwest and Central Southwest, and only in 2019 and 2020. Imports from Spain were reported in all years and were reported to all regions except the Upper Midwest, the Upper Southeast, and the Lower Southeast. Most subject imports (*** percent) between 2017 and the first half of 2020 were sold to two regions, the Lower Midwest and the Central Southwest. U.S. producers shipped the majority of their wind towers to these two regions as well. However, in the same period, *** percent of subject imports were sold to regions other than the top four regions served by the U.S. producers.

[3] Publication 5101, p. II-2.
[4] Publication 5101, p. II-3.
[5] Conference transcript pp 31, 73 (El-Sabaawi and Pickard)
[6] Not all producers were able to reconcile all their regional shipment data.

Table II-1
Wind towers: U.S. producers' shipments and U.S. importers' purchases and imports number of wind towers, by geographic market area and year, 2017-19 and January to June 2020

2017				
Region	**U.S. producers**	**India**	**Malaysia**	**Spain**
Northeast.–CT, ME, MA, NH, NJ, NY, PA, RI, and VT.	***	***	***	***
Upper Midwest.–MI, MN, NE, ND, SD, and WI.	288	***	***	---
Lower Midwest.–IL, IN, IA, KS, OH, and MO.	964	***	***	***
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.	824	***	***	***
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.	2,708	***	***	***
2018				
Region	**U.S. producers**	**India**	**Malaysia**	**Spain**
Northeast.–CT, ME, MA, NH, NJ, NY, PA, RI, and VT.	***	***	***	***
Upper Midwest.–MI, MN, NE, ND, SD, and WI.	438	***	***	***
Lower Midwest.–IL, IN, IA, KS, OH, and MO.	909	***	***	***
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.	776	***	***	***
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.	2,608	***	***	***
2019				
Region	**U.S. producers**	**India**	**Malaysia**	**Spain**
Northeast.–CT, ME, MA, NH, NJ, NY, PA, RI, and VT.	***	***	***	***
Upper Midwest.–MI, MN, NE, ND, SD, and WI.	620	***	***	***
Lower Midwest.–IL, IN, IA, KS, OH, and MO.	992	***	***	***
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.	844	***	***	***
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.	3,054	***	***	***

Table continued on next page.

Table II-1—Continued
Wind towers: U.S. producers' shipments and U.S. importers' purchases and imports number of wind towers, by geographic market area and year, 2017-19 and January to June 2020

January-June 2020				
Region	U.S. producers	India	Malaysia	Spain
Northeast.–CT, ME, MA, NH, NJ, NY, PA, RI, and VT.	***	***	***	***
Upper Midwest.–MI, MN, NE, ND, SD, and WI.	352	***	***	***
Lower Midwest.–IL, IN, IA, KS, OH, and MO.	587	***	***	***
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.	370	***	***	***
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.	1,639	***	***	***

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

Importers were asked about the importance of the location of a project in their sales of installations of wind towers. Four importers explained that project location was important for reasons of transportation, cost, and choice of supplier.[7] Firms elaborated that transportation costs could vary based on the 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 be used to deliver wind towers only in seven states (Texas, Oklahoma, Kansas, New Mexico, Arizona, Colorado and Wyoming), and rail transportation cannot be used for wind towers made by suppliers in other states. Importers also described distance as an important factor in the cost of a project (*** estimated that transportation costs was usually 20 to 30 percent of delivered cost of the tower to the customers' site).[8] *** indicated that it determines its tower supplier based on project location (both because of lower delivery cost and greater delivery predictability). AWEA stated that for projects on the Gulf of

[7] ***.
[8] ***.

Mexico, West Coast, and East Coast, it is easier to ship wind towers from overseas than by truck from some U.S. production facilities.[9]

For U.S. producers, 2.4 percent of sales were within 100 miles of their production facility, 60.2 percent were between 101 and 500 miles, 35.0 were between 501 and 1,000 miles, and 2.3 percent were over 1,000 miles. Only one importer (***) reported distances that imports were shipped within the United States. It shipped *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 500 miles, *** percent were between 501 and 1,000 miles, and *** percent over were 1,000 miles.

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. U.S. capacity utilization is higher than the capacity utilizations reported by subject producers and U.S. capacity is larger than the capacity reported for other countries. Inventories tend to be small to nonexistent because wind towers are produced to order.

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

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

	Capacity (wind towers)		Capacity utilization (percent)		Ratio of inventories to total shipments (percent)		Shipments by market, 2019 (percent)		Able to shift to alternate products
Country	2017	2019	2017	2019	2017	2019	Home market shipments	Exports to non-U.S. markets	No. of firms reporting "yes"
United States	***	***	***	***	***	***	***	***	3 of 6
India	***	***	***	***	***	***	***	***	0 of 2
Malaysia	***	***	***	***	***	***	***	***	0 of 1
Spain	***	***	***	***	***	***	***	***	1 of 2

Note: Responding U.S. producers accounted for all of U.S. production of wind towers in 2019. 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 2019. Responding foreign producer/exporter firms accounted for all of U.S. imports of wind towers from Malaysia during 2019. Responding foreign producer/exporter firms accounted for more than *** percent U.S. imports of wind towers from Spain during 2019. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Part I, "Summary Data and Data Sources."

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

Domestic production

Based on available information, U.S. producers of 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 whether reported capacity utilization reflects U.S. producers' real ability to ship more wind towers. U.S. producers reported the availability of unused capacity (***),[10] limited by *** export shipments and low inventory levels.

Production increased more than capacity between 2017 and 2019 resulting in a *** increase in capacity utilization. Other products that producers reportedly can produce on the

[10] The analysis in this section is based on data reported in U.S. producers' questionnaires. 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 the West Fargo facility could be restated "as quickly as ***." Petitioners' postconference brief, responses to staff questions p. 15.

same equipment as wind towers are ***. Since wind towers are produced-to-order, inventories cannot readily be reallocated to meet new demand. Petitioners report that supply contracts are designed to *** increasing factory efficiency, thus production is not directly tied to the timing of the installation.[11]

Subject imports from India

Based on available information, producers of wind towers from India have the ability to respond to changes in demand with moderate-to-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 ability and the increase in capacity. Factors mitigating responsiveness of supply include *** ability to shift production to or from alternate products.

Between 2017 and 2019, Indian capacity increased more than production, leading to substantial unused capacity. Indian producers ship *** of their wind towers to their home market.

Subject imports from Malaysia

Based on available information, producers of wind towers from Malaysia 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, growing capacity, and some ability to shift production to or from alternate products. Factors mitigating the responsiveness of supply include ***.

Both Malaysian capacity and production increased between 2017 and 2019; however production increased more, resulting in increased capacity utilization. Malaysian wind towers ***. The Malaysian producer reported that no other products can be produced on the same equipment as wind towers.

[11] Petitioners' postconference brief, exhibit 25.

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.

Both Spanish production and capacity increased between 2017 and 2019, but production increased more rapidly resulting in increased capacity utilization. A 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 in 2019. The largest sources of nonsubject imports during January 2017-June 2020 were Indonesia, Vietnam, and Korea, all countries that had antidumping orders put in place on August 26, 2020. Combined, these countries accounted for *** percent of nonsubject imports in 2019.

Supply constraints

Four of six responding U.S. producers reported no supply constraints. However, *** reported that its demand exceeded its capacity, and that it used other qualified suppliers to meet project timelines. Importers were asked if they had supply constraints on the sales of wind towers. Three of five importers reported no supply constraints for their sales. Two importers reported supply constraints: *** reported it declined projects due to availability and lead times; *** reported that because of *** it did not ***.

Four of five responding importers reported capacity constraints on their purchases of wind towers. *** declined an order that had already been negotiated for 50 or more towers in 2021 because its capacity was already allocated. *** reported that there is not enough capacity to supply the U.S. market, and as a result, sellers allocate shipments or are unable to meet the delivery schedule. ***.

***.

Petitioners, however, stated that OEMs' failed to pick up their ordered wind towers in a timely manner. The petitioners state that, if wind towers are not picked up, then the producers storage space fills and producers cannot continue to produce wind tower once their storage is full.[12]

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, the only product in which wind towers are used. Two key factors driving demand for wind towers are government incentives for wind energy projects and the relative cost of wind-based generation of electricity compared to the costs of other methods of generating electricity.

End uses and cost share

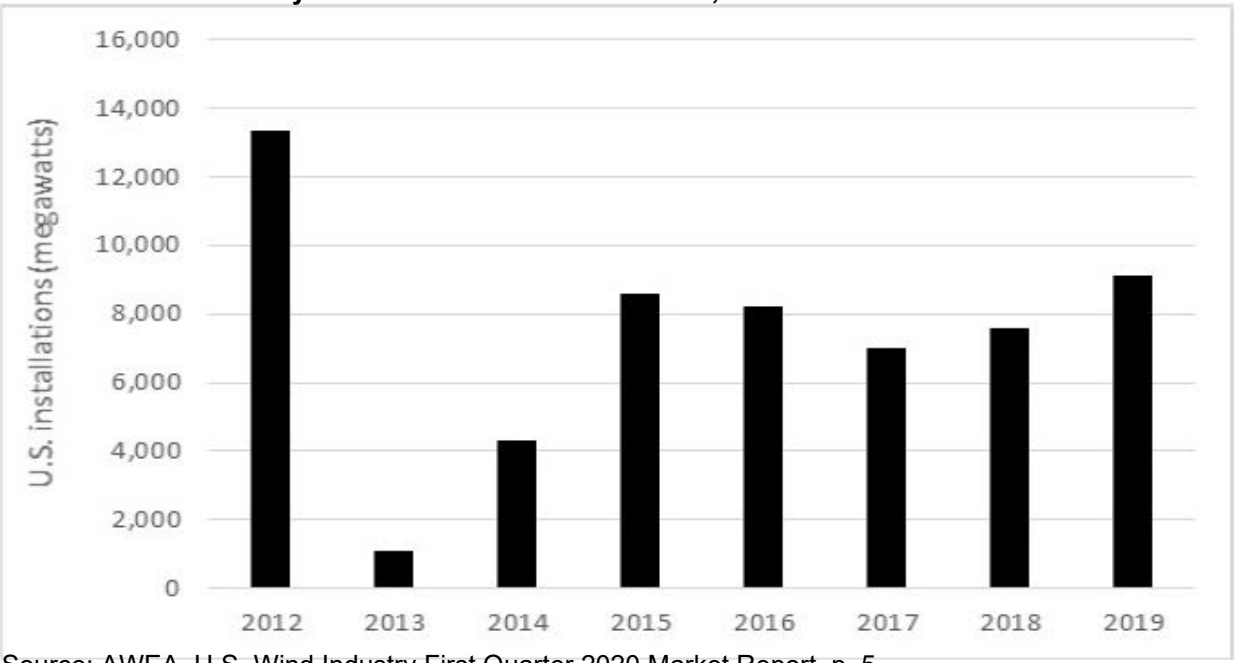
Wind towers are used exclusively in wind turbines to support the nacelles and rotor blades.[13] In the previous investigation, U.S. producers and importers generally estimated that wind towers accounted for *** percent of the cost of wind turbines.[14] Petitioners reported that the tower is a relatively small portion (*** percent) of the total cost of an installed turbine.[15] AWEA's representative reported that the tower makes up approximately 15 percent of the total capital cost of a wind turbine.[16]

[12] Petitioners' postconference brief, exhibit 25.
[13] Publication 5101, p. II-12.
[14] Publication 5101, p. II-12.
[15] Petitioners' postconference brief, answers to staff questions p. 7
[16] Conference transcript, p. 132 (Jochum).

Demand for wind turbines

U.S. utility-scale wind turbine installations increased from 7,010 MW in 2017 to 9,132 MW in 2019, an increase of 2,122 MW (figure II-1). 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, which is discussed below. In the first quarter of 2020, there were 1,821 MW of installations, up from 841 in the first quarter of 2019.[17]

Figure II-1
Wind towers: U.S. utility-scale wind turbine installations, 2012-19



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

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

Wind power incentives

Production tax credit

The production tax credit ("PTC") is a Federal tax credit per kilowatt-hour (kWh) of wind generation for the first 10 years of a wind project.[18] The PTC, a major factor in wind turbine installations, has been renewed five times since the end of 2012, but each time there was a lapse between the end of the previous PTC and the PTC renewal (table II-3). After each of these lapses, the PTC was retroactively extended. Projects were eligible for the PTC as long as they started construction prior to the deadline. In December 2019, the PTC was extended through the end of 2020, but the value of the tax credit is not the same in each year.[19] Projects begun in a given year may take five years to complete.[20] Additionally, in May 2020, due to the COVID-19 outbreak, these incentives were extended (given "safe harbor") to allow projects an additional year to begin construction in order to qualify.[21] Vestas states that the 2020 PTC will apply to projects completed through 2024.[22]

[18] Publication 5101, p. II-14.
[19] Publication 5101, p. II-14.
[20] Publication 5101, pp. II-14-II-15
[21] Publication 5101, p. II-15.
[22] Vesta's 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	
2-day lapse before expired PTC was extended				
American Taxpayer Relief Act of 2012	1/2/2013	1/1/2013	Start construction by 12/31/2013	
>11-month lapse before expired PTC was extended				
Tax Increase Prevention Act of 2014	12/19/2014	1/1/2014	Start construction by 12/31/2014	
>11-month lapse before expired PTC was extended				
Consolidated Appropriations Act of 2016	12/18/2015	1/1/2015	Start construction by 12/31/2016	100% PTC value
			Start construction by 12/31/2017	80% PTC value
			Start construction by 12/31/2018	60% PTC value
			Start construction by 12/31/2019	40% PTC value
>11-month lapse before expired PTC was extended				
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

Source: Publication 5101, p. II-15

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 will be 18 percent for wind projects begun between December 2019 and January 1, 2021.[23]

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

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

eligible for 30 percent.[24] The December 2019 renewal of the PTC also allows MACRS to continue to apply to wind projects.[25]

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.[26]

Expected impact of PTC expiration on demand

Firms' questionnaire responses about the impact of the PTC expiration on demand varied. Most responding U.S. producers (4 of 6) reported decreased demand because of the PTC expiration, although one of these (***) reported that it expected strong demand for clean energy through 2024 (table II-4). Two U.S. producers (***) expected demand would increase although one of these (***) reported that it expected the current PTC to support the market at least through 2021. Importer responses were more varied with two expecting demand increases, two expecting demand decreases, and two expecting demand fluctuations. Firms reporting that the expiration increased demand typically reported that this was because purchasers were purchasing more wind towers, now and in the near future, to take advantage of the PTC before it expired. Other firms reported that after the PTC expires demand will be lower because purchasers will no longer have this incentive to invest in wind power.[27] It is unclear if/or when the PTC will be renewed after it expires at the end of 2020.[28]

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[24] Publication 5101, pp. II-15-II-16.

[25] Publication 5101, p. II-16.

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

[27] For example, one importer (***) expected that if the PTC expired, the motivation for investing in wind energy projects "will disappear, and demand for wind towers will decrease." Another (***) expected demand to decrease but also reported that "demand for clean energy remains strong through 2024."

[28] Conference transcript, p. 145 (Jochum).

Table II-4
Wind towers: Firms' 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				
U.S. producers	1	2	2	---
Importers	2	1	1	1
Financial performance of your firm				
U.S. producers	2	1	2	1
Importers	1	1	---	3
Demand for wind towers in the U.S. market				
U.S. producers	2	---	4	---
Importers	2	---	2	2
Prices for wind towers in the U.S. market				
U.S. producers	1	1	2	2
Importers	1	1	---	3
Timing for U.S. wind energy projects in the development pipeline				
U.S. producers	3	1	---	2
Importers	1	3	1	1

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

At the conference, petitioners reported that demand is higher now because companies want to take advantage of the PTC before it expires.[29] Petitioners stated that when the PTC incentives expired at the end of 2013 "demand declined drastically," but because China and Vietnam were subject to orders, the "domestic producers performed well."[30] Petitioners expect that if the PTC is not renewed, demand will decline.[31]

Ms. Jochum of AWEA stated the wind energy industry does not "need the PTC any more" because of other incentives and mandates for renewable power.[32] For example, she stated, "in 2018 five states passed laws to increase their RPS targets including California and New Jersey."[33] Thus, if the PTC is not renewed, she expects that demand "may slow down slightly, but we do not expect to see the giant drop off."[34]

[29] Conference transcript, p. 121 (Blashford).
[30] Conference transcript, p. 26 (Bourland).
[31] Conference transcript, p. 33 (El-Sabaawi).
[32] Conference transcript, p. 138 (Jochum).
[33] Conference transcript, p. 139 (Jochum).
[34] Conference transcript, p. 140 (Jochum).

Expected impact of PTC expiration on financial performance

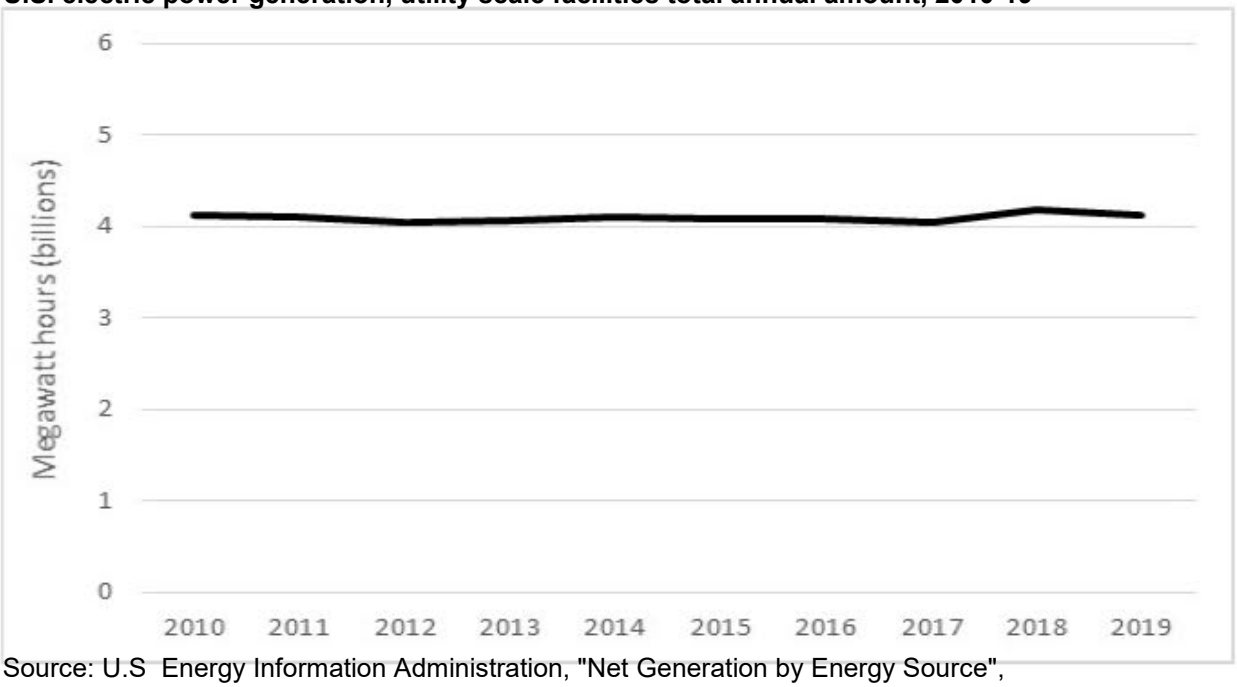
Two U.S. producers (***) reported that the anticipated expiration of the PTC would improve their financial performance. They reported that the expiration, by requiring projects to be started by the end of 2020 in order to benefit from the PTC, will increase demand for wind towers at least through 2021. Two U.S. producers reporting that the expiration will decrease their financial performance but disagreed on the impact it would have on demand. *** reported that 2020 demand decreased slightly while *** reported strong demand. However, both reported that demand for their firms' wind towers and the prices they receive for them are low due to imports. The one importer (*** reporting that the expiration of the PTC would benefit it financially reported the expiration would increase demand. Three importers reported that financial performance would fluctuate, with one of these importers (***) explaining that it does business in all North America.

Wind-generated electricity demand

Demand for electric power is one driver of the demand for wind-generated electricity specifically. U.S. electricity generation typically reflects U.S. demand for electric power.[35] 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).

[35] 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 to reduce costs.

Figure II-2
U.S. electric power generation, utility scale facilities total annual amount, 2010-19



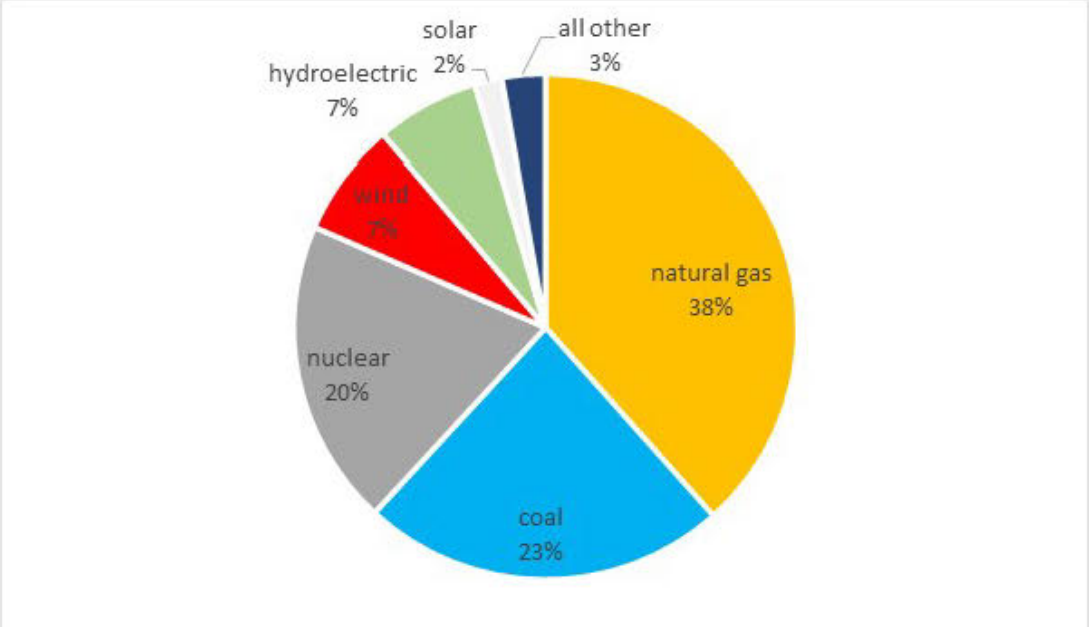
Source: U.S Energy Information Administration, "Net Generation by Energy Source", https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_1_01, Publication 5101, figure II-2.

Electricity demand in the United States is supplied primarily by conventional sources,[36] with coal and natural gas accounting for almost two-thirds of all U.S. electricity generated in 2019 (figure II-3). Wind energy accounted for 7 percent of total electricity generated in 2019. 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 40 percent of all new electric generating capacity installed in the United States in 2019 (figure II-4). Some states are requiring increased use of renewable electricity sources, for these applications, wind generated electricity mainly competes with solar generated electricity. In addition, 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, regional demand and regional differences in the effectiveness of wind power will be important.[37]

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

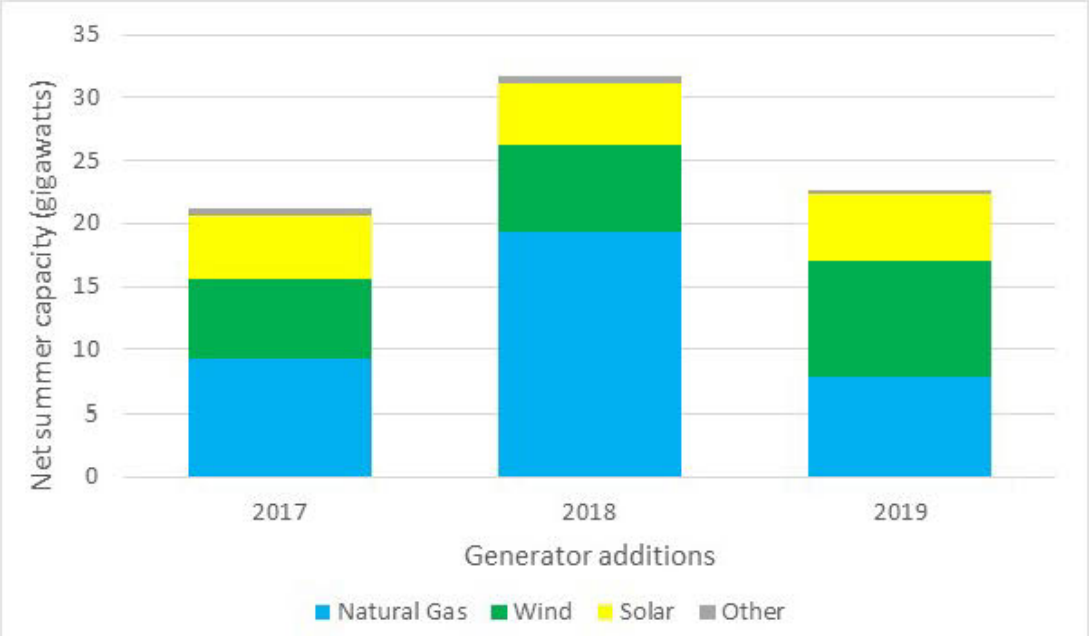
[37] How Energy Is Delivered To Consumers, U.S. Energy Information Administration, https://www.eia.gov/energyexplained/electricity/delivery-to-consumers.php, retrieved October 28, 2020.

Figure II-3
Net U.S. electricity generation, by sector, 2019



Source: U.S. Energy Information Administration, https://www.eia.gov/electricity/data/browser/, Publication 5101, figure II-3.

Figure II-4
New U.S. electrical generating capacity by type, yearly, 2017-19



Source: U.S. Energy Information Administration, Electric Power Annual 2017–18, Table 4.6, October 18, 2019, and October 22, 2018, https://www.eia.gov/electricity/annual/; and EIA, Electric Power Monthly, Table 6.3, February 2020, https://www.eia.gov/electricity/monthly/.

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").[38] Electricity producers will want to use sources with lower LCOEs. The Energy Information Administration's (EIA) estimates of the average LCOE for new plants entering service in 2023 are shown in table II-5. When tax credits were included, new onshore wind installations had a lower estimated LCOE ($36.6/MWh) compared to other sources including geothermal, solar, and natural gas.[39]

Table II-5
Estimated U.S. capacity-weighted average LCOE for plants entering service in 2023, (2018 $/MWh)

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
Conventional combined cycle	42.8	0	42.8
Advanced combustion turbine	77.5	0	77.5
Biomass	92.1	0	92.1
Wind, offshore	117.9	-11.5	106.5

Note.--EIA notes that "Technologies for which capacity additions are not expected do not have a capacity-weighted average."

Source: Publication 5101, table II-5.

Prices for wind-generated electricity have declined steadily from 2010 to 2017. Average capacity-weighted power purchase agreement[40] ("PPA") prices declined from $39/MWh for those signed in 2012 to $17/MWh for those signed in 2017 (table II-6). 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

[38] 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.

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

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

were brought online, and the Central region has the lowest PPA prices.[41] According to the USDOE, these record-low levels are attributable to declining costs, improved performance, historically low interest rates, and natural gas prices.[42] 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-7). Natural gas electric power prices have continued declining in 2020 and were $2.11 per thousand cubic feet in July 2020.[43]

Table II-6
Nationwide power purchase agreement ("PPA") prices for wind-generated electricity, by date of PPA signing, 2010-19

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. 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.

[41] 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.

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

[43] U.S. Energy Information Administration, Natural Gas Electric Power Price, https://www.eia.gov/dnav/ng/hist/n3045us3M.htm downloaded October 2, 2020.

Table II-7
Natural gas: U.S. natural gas electric power price

Year (partial year for 2020)	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	2.98
January to July 2020	2.30

Source: *U.S. Energy Information Administration,* https://www.eia.gov/dnav/ng/hist/n3045us3A.htm, accessed May 5, 2020, and https://www.eia.gov/dnav/ng/hist/n3045us3M.htm, accessed October 5, 2020.

Business cycles

Four of six responding U.S. producers and four of six responding importers indicated that the wind tower market was subject to business cycles or other distinctive conditions of competition. Firms reported a number of factors including the U.S. renewable energy policy (PTC; state RPS requirements, and the off and on again PTC cycles); cost of other forms of power generation; tariffs on steel increasing the cost of manufacturing wind towers in the United States (see Part V for data on U.S. steel prices); orders becoming more aligned with specific projects; and more installations in the second half of the year.

All five responding U.S. producers and four of six responding importers indicated that there had been changes to the business cycle for wind towers since January 1, 2017, generally citing the PTC. U.S. importer *** reported government agencies have provided a number of extensions under the PTC framework because of the possible impact of COVID-19 on production schedules. 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 and importers described U.S. demand for wind towers as having increased since January 1, 2017 (table II-8). Three U.S. producers and four importers reported that the PTC had caused U.S. demand either to decrease or fluctuate.

Most responding U.S. producers and importers described demand outside the United States as increasing. Reasons cited for the trends in demand outside the United States included the decreasing levelized cost of energy for wind-generated electricity, the lower cost of

renewable energy, increasing awareness of "green" energy/government strategies to reduce carbon emissions, and offshore wind developments.

Table II-8
Wind towers: Firms' responses regarding U.S. demand and demand outside the United States

Item	Increase	No change	Decrease	Fluctuate
Demand in the United States				
U.S. producers	5	0	0	1
Importers	4	0	0	2
Demand outside the United States				
U.S. producers	2	0	0	3
Importers	4	1	1	1

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

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 may include use of alternative energy sources, but choices between energy sources have many criteria.

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.[44] Importers and purchasers often described factors other than price, including transportation costs and availability, as important in their purchasing decisions.

Lead times

All responding U.S. producers and importers reported that all their commercial shipments were produced-to-order. U.S. producers reported lead times between 100 to 270 days, while importers reported lead times between 155 to 270 days.

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

Factors affecting purchasing decisions

Purchasers responding to lost sales lost revenue allegations[45] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for wind towers. The major purchasing factors identified by firms include availability (capacity, production pace, capacity available when towers are needed, and flexibility) quality (meet specifications and requirements, and experience), and price (landed duty paid cost and total delivered costs based on information at time of purchase).[46] Other factors reported included: manufacturing expertise; manufacturer close to customer site; best transportation mode; and seasonal transportation restrictions.

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 were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-9, most producers and most importers reported product from all country pair were always interchangeable. One importer (***) reported factors limiting interchangeability included that manufacturers in different countries are qualified to produce different wind towers, that certain U.S. producers (***) have quality problems that reduce interchangeability, and that different production locations and different means of transportation cause differences in transportation costs.

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

[46] One purchaser (***) reported that wind towers were a component in the wind turbine, and it did not purchase wind towers separately from the tower supplier.

Table II-9
Wind towers: Interchangeability between wind towers produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting			
	A	F	S	N	A	F	S	N
U.S. vs. subject countries:								
U.S. vs. India	4	1	---	---	3	---	1	---
U.S. vs. Malaysia	4	1	---	---	3	---	2	---
U.S. vs. Spain	4	1	---	---	3	---	1	---
Subject countries comparisons:								
India vs. Malaysia	3	2	---	---	3	---	1	---
India vs. Spain	4	1	---	---	3	---	1	---
Malaysia vs. Spain	4	1	---	---	3	---	1	---
Nonsubject countries comparisons:								
U.S. vs. nonsubject	4	1	---	---	4	---	2	---
India vs. nonsubject	4	1	---	---	3	---	1	---
Malaysia vs. nonsubject	4	1	---	---	3	---	1	---
Spain vs. nonsubject	4	1	---	---	3	---	1	---

Note: A=Always, F=Frequently, S=Sometimes, N=Never.

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

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of wind towers from the United States, subject, or nonsubject countries. As seen in table II-10, most U.S. producers reported that differences other than price were never important, while all importers reported that differences other than price were at least sometimes significant. Factors other than price (not recorded under interchangeability) included: lead times, capacity, production pace, flexibility, technical support, on-time delivery performance, and product range.

Table II-10
Wind towers: Significance of differences other than price between wind towers produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting			
	A	F	S	N	A	F	S	N
U.S. vs. subject countries:								
U.S. vs. India	1	---	1	3	2	---	1	---
U.S. vs. Malaysia	1	---	1	3	2	---	3	---
U.S. vs. Spain	1	---	1	3	2	---	1	---
Subject countries comparisons:								
India vs. Malaysia	1	---	1	3	2	---	1	---
India vs. Spain	1	---	1	3	2	---	1	---
Malaysia vs. Spain	1	---	1	3	2	---	1	---
Nonsubject countries comparisons:								
U.S. vs. nonsubject	1	---	1	3	2	---	2	---
India vs. nonsubject	1	---	1	3	2	---	1	---
Malaysia vs. nonsubject	1	---	1	3	2	---	2	---
Spain vs. nonsubject	1	---	1	3	2	---	1	---

Note: A=Always, F=Frequently, S=Sometimes, N=Never.

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

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 was 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 2019.

U.S. producers

The Commission issued a U.S. producers' 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 petitions, and shares of total production.

Table III-1
Wind towers: U.S. producers of wind towers, their positions on the petitions, production locations, and shares of reported production, 2019

Firm	Position on petitions	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	***
Total			***

Note: Arcosa has not produced wind towers at its West Fargo, North Dakota location since 2016. Conference transcript, p. 22 (Bourland) and petitioner's postconference brief, answers to staff questions, p. 14.
Note: GRI Towers ***.

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

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 wind towers.

Table III-2
Wind towers: U.S. producers' ownership, related and/or affiliated firms

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

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

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, 2017. All reported responses are shown in table III-3.

Table III-3
Wind towers: U.S. producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Expansions:	
***	***
***	***
***	***
Consolidations:	
***	***
Prolonged shutdowns or curtailments:	
***	***
***	***
***	***
Revised labor agreements:	
***	***
Other:	
***	***
***	***
***	***
***	***
***	***

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

Arcosa notes that the WARN notice it issued in *** to advise 148 employees in its Clinton, Illinois plant that they would be laid off in November 2020 was specifically a direct result of *** as well as ***.[1] However, ***.[2] ***.[3]

Arcosa states that its production facility in West Fargo, North Dakota has been consistently quoted to customers throughout the period of investigation despite being idled since 2016.[4] Furthermore, Arcosa notes that the West Fargo facility is available for production, but has been idled due to a lack of orders. Arcosa estimates that the cost of maintaining the West Fargo facility is approximately *** and that it could restart the facility with an investment of approximately ***.[5]

U.S. production, capacity, and capacity utilization

Table III-4 and figure III-1 present U.S. producers' production, capacity, and capacity utilization.[6] Collectively, responding U.S. producers' production capacity increased by 3.4 percent during 2017-19. With the exception of ***, all other U.S. producers reported either steady or increasing production capacity during 2017-19.[7] As presented in table III-3, ***. Responding U.S. producers' production capacity was 2.3 percent higher in January-June

[1] Petitioner's postconference brief, answers to staff questions, p. 13.

[2] ***. Ibid.

[3] Ibid.

[4] Ibid, p. 14 and conference transcript, p. 22 (Bourland).

[5] Ibid, p. 15.

[6] ***. The annual production capacity for this plant is *** units. Petitioner's postconference brief, exh. 6.

[7] U.S. producer, ***, noted in its questionnaire response that production capacity, when calculated on a per tower basis, ***.

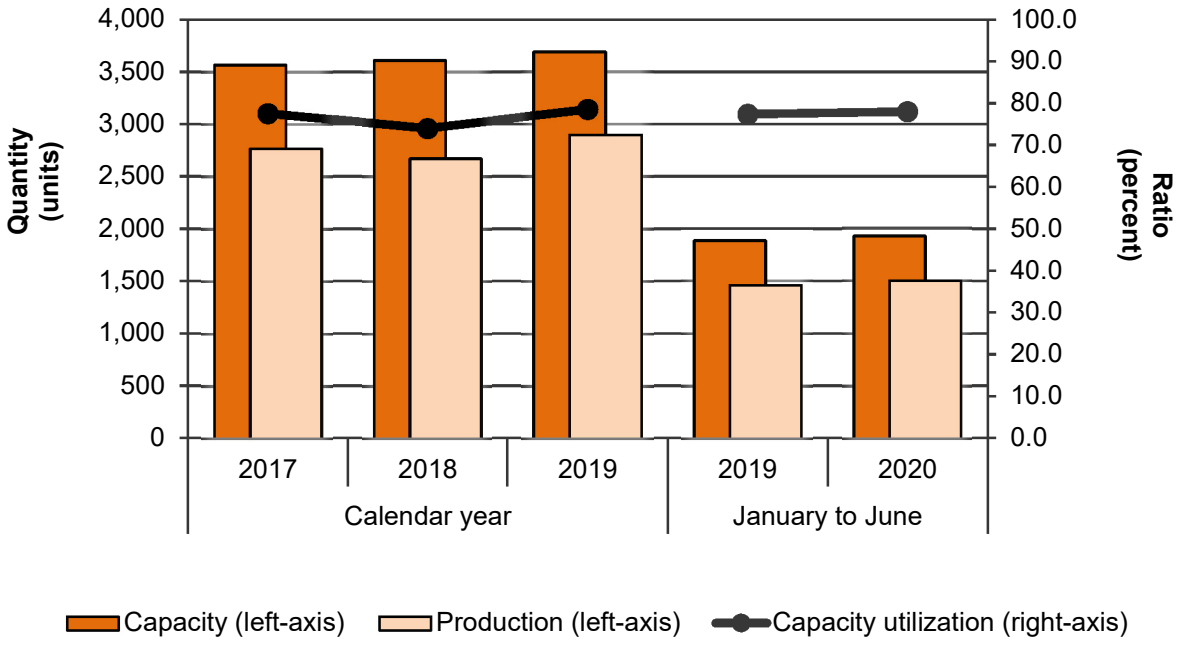
("interim") 2020 than in interim 2019. All six producers reported either the same or a higher level of production capacity in interim 2020 than in interim 2019.

Table III-4
Wind towers: U.S. producers' production, capacity, and capacity utilization, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Capacity (units)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	3,567	3,609	3,687	1,884	1,927
	Production (units)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	2,767	2,672	2,895	1,457	1,502
	Capacity utilization (percent)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	77.6	74.0	78.5	77.3	77.9
	Share of production (percent)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	100.0	100.0	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, 2017-19, January to June 2019, and January to June 2020



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

Responding U.S. producers' collective production increased by 4.6 percent during 2017-19, despite a 3.4 percent decrease from 2017 to 2018. These increases in production are consistent with ***. Responding U.S. producers' production was 3.1 percent higher in interim 2020 than in interim 2019. All U.S. producers, except *** reported more production in interim 2020 than in interim 2019.

U.S. producers' capacity utilization increased irregularly from 77.6 percent in 2017 to 78.5 percent in 2019 as their collective production increased at a higher rate than capacity. The increase in capacity utilization reported by *** was largely offset by the decrease in capacity utilization reported by ***. *** reported full capacity utilization throughout 2017-19. Responding U.S. producers' collective capacity utilization was 77.9 percent in interim 2020, compared with 77.3 percent in interim 2019. Three of the six U.S. producers reported higher capacity utilization in interim 2020 than in interim 2019.

All six responding U.S. producers reported constraints affecting their firm's production of wind towers. Such constraints include labor, limitations of equipment, and tower type and size, which can affect the amount of raw materials required, as well as the length of time required for various stages of production such as painting and welding.[8]

Alternative products

Table III-5 presents data on U.S. producers' overall capacity and production on shared equipment.

Table III-5
Wind towers: U.S. producers' overall plant capacity and production on the same equipment as subject production, 2017-19, January to June 2019, and January to June 2020.

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
Overall capacity	***	***	***	***	***
Production:					
Wind towers	2,767	2,672	2,895	1,457	1,502
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production:					
Wind towers	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***

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

[8] In addition to the tower type and size, U.S. producers also reported shipping *** percent of their towers with internal components, including but not limited to, mechanical and/or electrical fittings such as platforms ladders, lighting, lifts (elevators), electrical-cable harnesses, storage lockers, and/or other accessories.

The Commission requested that U.S. producers provide data regarding production of wind towers and other products produced on the same machinery. Responding U.S. producers' overall production and capacity utilization increased irregularly during 2017-19 and both were higher in interim 2020 than interim 2019. While *** reported producing *** on the same machinery used to produce wind towers, wind towers accounted for *** percent of production on shared equipment.[9]

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 2017-19 and in interim 2020, as no U.S. producers reported export shipments. The quantity of responding U.S. producers' U.S. shipments increased each year during 2017-19, ending 10.9 percent higher in 2019 than in 2017 and was 6.4 percent higher in interim 2020 than in interim 2019. The value of responding U.S. producers' U.S. shipments also increased in each year during 2017-19, ending 18.0 percent higher in 2019 than in 2017 and was 13.0 percent higher in interim 2020 than in interim 2019. The unit value of responding U.S. producers' U.S. shipments increased from $315,595 per unit in 2017 to $335,731 per unit in 2019 and was $345,247 per unit in interim 2020, compared with $325,196 per unit in interim 2020.

By quantity, commercial U.S. shipments accounted for the majority of U.S. producers' U.S. shipments during 2017-19 and in interim 2020 (*** percent in 2017, *** percent in 2018, *** percent in 2019, and *** percent in interim 2020). The quantity and value of responding U.S. producers' collective commercial U.S. shipments increased irregularly by *** percent and *** percent, respectively, during 2017-19 and was *** percent and *** percent higher, respectively, in interim 2020 than in interim 2019. The unit value of responding U.S. producers' collective commercial U.S. shipments decreased from $*** per tower in 2017 to $*** per tower in 2018, but then increased to $*** per tower in 2019. It was $*** per tower in interim 2020, compared with $*** per tower in interim 2019.

[9] *** noted in its questionnaire response that while it does produce *** on the same machinery as wind towers, ***. *** noted that while it ***.

Table III-6
Wind towers: U.S. producers' U.S. shipments, exports shipments, and total shipments, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
Commercial U.S. shipments	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
U.S. shipments	2,673	2,698	2,964	1,447	1,540
Export shipments	---	---	---	---	---
Total shipments	2,673	2,698	2,964	1,447	1,540
	Value (1,000 dollars)				
Commercial U.S. shipments	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
U.S. shipments	843,586	859,598	995,106	470,559	531,680
Export shipments	---	---	---	---	---
Total shipments	843,586	859,598	995,106	470,559	531,680
	Unit value (dollars per unit)				
Commercial U.S. shipments	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
U.S. shipments	315,595	318,606	335,731	325,196	345,247
Export shipments	---	---	---	---	---
Total shipments	315,595	318,606	335,731	325,196	345,247
	Share of quantity (percent)				
Commercial U.S. shipments	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
U.S. shipments	100.0	100.0	100.0	100.0	100.0
Export shipments	---	---	---	---	---
Total shipments	100.0	100.0	100.0	100.0	100.0
	Share of value (percent)				
Commercial U.S. shipments	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
U.S. shipments	100.0	100.0	100.0	100.0	100.0
Export shipments	---	---	---	---	---
Total shipments	100.0	100.0	100.0	100.0	100.0

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

Transfers to related firms accounted for the remainder of responding U.S. producers' total shipments during 2017-19 and in interim 2020.[10] The quantity and value of responding U.S. producers' transfers to related firms increased by *** percent and *** percent, respectively, during 2017-19 and was *** percent and *** percent higher, respectively, in interim 2020 than in interim 2019. The unit value of responding U.S. producers' transfers to related firms increased from $*** per tower in 2017 to $*** per tower in 2019 and was $*** per tower in interim 2020, compared with $*** per tower in interim 2019. No U.S. producer reported internal consumption or export shipments during 2017-19 or in interim 2020. 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 D.

Captive consumption

Section 771(7)(C)(iv) of the Act states that–[11]

> *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

As reported in table III-6, transfers to related firms accounted for between *** percent and *** percent by quantity and between *** percent and *** percent by value of U.S. producers' U.S. shipments of wind towers during 2017-19 and *** percent by quantity and *** percent by value in interim 2020.

[10] ***.

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

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.

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-7 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.[12] See part II for additional information related to cost share.

Table III-7
Wind towers: Share of contribution to wind turbines

Item	Share of value (percent)	Share of quantity (percent)
Tower	***	***
Other	***	***
Total	***	***

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

[12] The Petitioner argues that the Commission should use height or weight in order to determine whether the domestic like product is the predominant material input in the production of the downstream article that is captively produced. See Petitioner's postconference brief at 20. In a prior related investigation, the Commission's staff report found that wind towers comprise about two-thirds of the weight of the complete turbine. See USITC Pub. No. 4372 February 2013 at p. I-9. However, in the most recent related investigations, the Commission found no evidence on the record that warranted departure from applying its standard value-based analysis. See Publication 5101 at p. 25.

U.S. producers' inventories

Table III-8 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**.** Responding U.S. producers' end-of-period inventories decreased by *** percent during 2017-19 and was *** percent lower in interim 2020 than in interim 2019.[13] The ratio of responding U.S. producers' end-of-period inventories to their production decreased from *** percent in 2017 to *** percent in 2019 and was *** percent in interim 2020, compared with *** percent in interim 2019. The ratio of responding U.S. producers' end-of-period inventories to U.S. shipments decreased from *** percent in 2017 to *** percent in 2019 and was *** percent in interim 2020, compared with *** percent in interim 2019.

Table III-8
Wind towers: U.S. producers' inventories, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. producers' end-of-period inventories	***	***	***	***	***
	Ratio (percent)				
Ratio of inventories to.-- U.S. production	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

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

[13] The difference in end-of-period inventories between the two interim periods reflects *** operations as their end-of-period inventories were ***, respectively, in interim 2020, compared with ***, respectively, in interim 2019.

U.S. producers' imports

U.S. producers' imports and purchases of wind towers are presented in table III-9. As discussed previously, ***, reported imports of wind towers from ***. The ratios of *** U.S. imports from *** to its production and of its U.S. imports from *** to its production were *** percent and *** percent, respectively, in 2019. In interim 2020, the ratios of *** U.S. imports from *** to its production and of its U.S. imports from *** to its production were *** percent and *** percent, respectively.[14] The ratio of *** U.S. imports from *** to its production decreased from *** percent in 2017 to *** percent 2019 and was *** percent in interim 2020. Overall, the ratio of *** U.S. imports from subject sources to its production decreased from *** percent in 2017 to *** percent in 2019 and was *** percent in interim 2020. The ratio of *** U.S. imports from nonsubject sources to its production increased from *** percent in 2017 to *** percent in 2019 and was *** percent in interim 2020.

[14] Representatives from *** note that ***. Email from ***, October 27, 2020.

Table III-9
Wind towers: U.S. producers' U.S. production and imports, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
*** U.S. production	***	***	***	***	***
*** U.S. imports from.—					
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Subject import sources	***	***	***	***	***
Nonsubject import sources	***	***	***	***	***
All imports sources	***	***	***	***	***
	Ratio (percent)				
*** ratio to U.S. production of imports from.—					
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Subject import sources	***	***	***	***	***
Nonsubject import sources	***	***	***	***	***
All imports sources	***	***	***	***	***
	Narrative				
*** reason for importing	***				

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

U.S. employment, wages, and productivity

Table III-10 presents U.S. producers' employment-related data. The number of production and related workers ("PRWs") decreased by 2.0 percent during 2017-19. However, it was 15.9 percent higher in interim 2020 than in interim 2019. Total hours worked and hours worked per PRW increased by 4.7 percent and 6.8 percent, respectively, during 2017-19. Total hours worked was 15.8 percent higher in interim 2020 than in interim 2019 while hours worked per PRW was at nearly the same level in each interim period. Wages paid increased by 0.3 percent and was 16.7 percent higher in interim 2020 than in interim 2019. Hourly wages, conversely, decreased by 4.2 percent during 2017-19. However, they were 0.7 percent higher in interim 2020 than in interim 2019. Productivity stayed relatively constant during 2017-19. Labor costs decreased by 4.1 percent during 2017-19 and was 13.2 percent higher in interim 2020 than in interim 2019.

Table III-10
Wind towers: Average number of production and related workers, hours worked, wages paid to such employees, hourly wages, productivity, and unit labor costs, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
Production and related workers (PRWs) (number)	2,227	2,085	2,183	2,027	2,349
Total hours worked (1,000 hours)	4,674	4,276	4,894	2,891	3,348
Hours worked per PRW (hours)	2,099	2,051	2,242	1,426	1,425
Wages paid ($1,000)	164,331	156,739	164,875	74,382	86,778
Hourly wages (dollars per hour)	$35.16	$36.66	$33.69	$25.73	$25.92
Productivity (units per 1,000 hours)	5.9	6.2	5.9	5.0	4.5
Unit labor costs (dollars per unit)	$59,390	$58,660	$56,952	$51,051	$57,775

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

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

U.S. importers

The Commission issued U.S. importers' questionnaires to eleven firms believed to be U.S. importers of wind towers, as well as to all U.S. producers of wind towers.[1] Usable questionnaire responses were received from six companies, representing the vast majority of U.S. imports from India, Malaysia, and Spain in 2019 under HTS statistical reporting number 7308.20.0020, a category that includes towers of various sizes as well as lattice masts. 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 2019.

Table IV-1
Wind towers: U.S. importers by source, 2019

Firm	Headquarters	Share of imports by source (percent)					
		India	Malaysia	Spain	Subject Sources	Nonsubject sources	All import sources
CS Wind	Cheonan	***	***	***	***	***	***
GE	Schenectady, NY	***	***	***	***	***	***
Nordex	Chicago, IL	***	***	***	***	***	***
Rattlesnake	Chicago, IL	***	***	***	***	***	***
Siemens	Orlando, FL	***	***	***	***	***	***
Vestas	Portland, OR	***	***	***	***	***	***
Total		***	***	***	***	***	***

Note: CS Wind reported in its questionnaire that it ***.

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

[1] The Commission issued questionnaires to those firms identified in the petitions, along with firms that, based on a review of data provided by U.S. Customs and Border Protection ("Customs"), may have accounted for more than one percent of total imports under HTS statistical reporting number 7308.20.0020 in 2019.

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 from subject sources accounted for a minority share of total imports wind towers, by quantity, throughout 2017-19, but accounted for a larger share in interim 2020 (*** percent). Imports from Spain accounted for a decreasing share of total imports during 2017-19 (*** percent in 2017 and *** percent in 2019), but accounted for a larger share in interim 2020 (*** percent). Responding importers began importing wind towers from India and Malaysia in 2019. U.S. imports from India and Malaysia accounted for *** percent and *** percent of total U.S. imports, respectively, in 2019 and *** percent and *** percent, respectively, in interim 2020. By quantity, U.S. imports from nonsubject sources accounted for the majority of total imports during 2017-19. However, its share of total imports was *** percentage points lower in interim 2020 than in interim 2019.

After decreasing by *** percent from 2017 to 2018, the quantity of U.S. imports of wind towers from subject sources increased by *** from 2018 to 2019, ending *** percent higher in 2019 than in 2017. The quantity of imports from subject sources was *** higher in interim 2020 than in interim 2019. The unit value of imports from subject sources increased from $*** per unit in 2017 to $*** per unit in 2018, but then decreased to $*** per unit in 2019. It was $*** per unit in interim 2020, compared with $*** per unit in interim 2019.

Table IV-2
Wind towers: U.S. imports by source, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. imports from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	1,070	1,131	1,832	776	1,096
	Value (1,000 dollars)				
U.S. imports from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	282,013	263,447	465,302	175,069	303,063
	Unit value (dollars per unit)				
U.S. imports from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	263,564	232,933	253,986	225,604	276,517

Continued on next page.

Table IV-2—Continued
Wind towers: U.S. imports by source, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Share of quantity (percent)				
U.S. imports from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	100.0	100.0	100.0	100.0	100.0
	Share of value (percent)				
U.S. imports from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	100.0	100.0	100.0	100.0	100.0
	Ratio to U.S. production				
U.S. imports from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	38.7	42.3	63.3	53.3	73.0

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

Figure IV-1
Wind towers: U.S. import quantity and average unit value, 2017-19, January to June 2019, and January to June 2020

* * * * * * *

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

The quantity of U.S. imports from Spain decreased by *** percent during 2017-19, with the majority of the decrease occurring from 2017 to 2018. However, it was *** higher in interim 2020 than in interim 2019. The value of U.S. imports of wind towers from Spain also decreased during 2017-19, ending *** percent lower in 2019 than in 2017. However, it was *** higher in interim 2020 than in interim 2019. As a result of quantity decreasing at a higher rate than value, the unit value of U.S. imports from Spain increased from $*** per tower in 2017 to $*** per tower in 2018 and $*** per unit in 2019.[2] It was $*** per unit in interim 2020, compared with $*** per tower in interim 2019.[3]

[2] Vestas notes that ***. Email from ***, October 27, 2020.
[3] The difference in the unit value between the interim periods reflects ***.

Responding U.S. importers *** wind towers from India or Malaysia in 2017 and 2018. However, *** wind towers from Malaysia and *** wind towers from India and Malaysia in 2019. *** wind towers from India in interim 2019, but imported *** units from India in interim 2020.[4] The quantity of U.S. imports of wind towers from Malaysia was *** percent higher in interim 2020 than in interim 2019.[5] The difference in the quantity of U.S. imports of wind towers from Malaysia between the interim periods is due to *** operations as its imports were *** higher in interim 2020 than in interim 2019.

The unit values of U.S. imports of wind towers from India and from Malaysia in 2019 were $*** per unit and $*** per unit, respectively. The unit value of U.S. imports of wind towers from India was $*** per unit in interim 2020 while the unit value of U.S. imports of wind towers from Malaysia was $*** per unit in interim 2020, compared with $*** per unit in interim 2019.

The quantity of U.S. imports from nonsubject sources increased in each year during 2017-19, ending *** percent higher in 2019 than in 2017.[6] However, it was *** percent lower in interim 2020 than in interim 2019. By value, U.S. imports of wind towers from nonsubject sources also increased in each year during 2017-19, ending *** percent higher in 2019 than in 2017. It was *** percent higher in interim 2020 than in interim 2019. The unit value of U.S. imports of wind towers from nonsubject sources decreased from $*** per unit in 2017 to $*** per unit in 2018, but then increased to $*** per unit in 2019. It was $*** per unit in interim 2020, compared with $*** per unit in interim 2019.

---

[4] ***.

[5] The difference in the quantity of U.S. imports of wind towers from Malaysia between the interim periods is due to *** operations as it imported *** units from Malaysia in interim 2020, after *** in interim 2019. This offset the change in the quantity of *** imports from Malaysia, which was *** units in interim 2019 and *** units in interim 2020.

[6] The Commission did not receive a response to the U.S. importers' questionnaire from ***, which is a known U.S. importer of wind towers from nonsubject sources. Consequently, data for U.S. imports from nonsubject sources are likely understated.

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 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 the most recent 12-month period.

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

Item	September 2019 through August 2020	
	Quantity (units)	Share quantity (percent)
U.S. imports from.--		
India	***	***
Malaysia	***	***
Spain	***	***
Subject sources	***	***
Nonsubject sources	***	***
All import sources	***	***

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

[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)).

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

The Commission requested information concerning U.S. producers' and U.S. importers' U.S. shipments of wind towers by height for 2019. U.S. producers reported U.S. shipments of wind towers measuring 81 meters to 120 meters in 2019 with the vast majority of their U.S. shipments were towers measuring 81 to 90 meters. Only two of six importers, ***, reported U.S. shipments of wind towers by height in 2019.[9] *** reported U.S. shipments of wind towers from Malaysia measuring 81 meters to 90 meters while *** reported U.S. shipments of wind towers from Spain measuring 101 meters to 110 meters.[10]

Geographical markets

Table IV-4 presents the value of U.S. imports of towers and lattice masts under HTS statistical reporting number 7308.20.0020 in 2019 by border of entry based on official import statistics. Nearly all imports of towers and lattice masts from India (99.6 percent), the vast majority of imports of towers and lattice masts from Spain (80.9 percent), and all imports from Malaysia entered the United State 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 D.

[9] Data for U.S. importers' U.S. shipments are based on purchase cost data submitted in response to Commission questionnaires.

[10] As presented in table I-1 *** accounted for *** percent of U.S importers' U.S. shipments of imports from Malaysia and *** accounted for *** percent of U.S. importers' U.S. shipments of imports from Spain in 2019. Collectively, these firms accounted for *** percent of U.S. importers' U.S. shipments of subject imports in 2019.

Table IV-4
Towers and lattice masts: U.S. imports by border of entry, 2019

Item	Border of entry				
	East	North	South	West	All borders
	Value (1,000 dollars)				
U.S. imports from.--					
India	101	41	33,903	---	34,045
Malaysia	---	---	28,486	---	28,486
Spain	3,975	607	19,385	---	23,967
Subject	4,076	648	81,774	---	86,498
Nonsubject sources	6,898	65,786	306,710	38,613	418,008
All import sources	10,973	66,435	388,484	38,613	504,505
	Share across (percent)				
U.S. imports from.--					
India	0.3	0.1	99.6	---	100.0
Malaysia	---	---	100.0	---	100.0
Spain	16.6	2.5	80.9	---	100.0
Subject	4.7	0.7	94.5	---	100.0
Nonsubject sources	1.7	15.7	73.4	9.2	100.0
All import sources	2.2	13.2	77.0	7.7	100.0
	Share down (percent)				
U.S. imports from.--					
India	0.9	0.1	8.7	---	6.7
Malaysia	---	---	7.3	---	5.6
Spain	36.2	0.9	5.0	---	4.8
Subject	37.1	1.0	21.0	---	17.1
Nonsubject sources	62.9	99.0	79.0	100.0	82.9
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 October 28, 2020.

Presence in the market

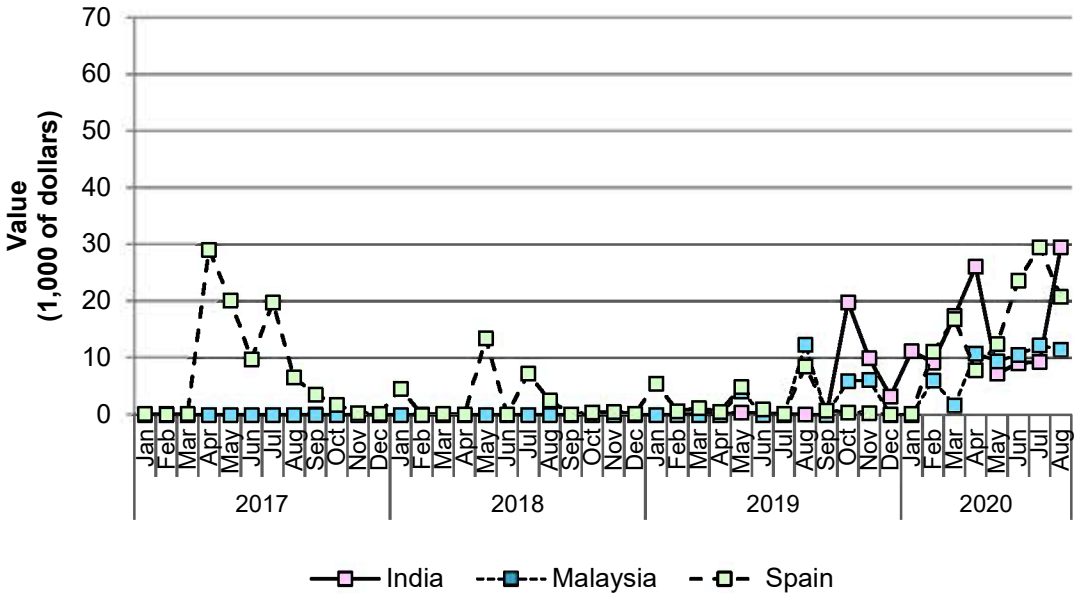
Table IV-5 and figures IV-2 and IV-3 present monthly official U.S. import statistics for subject and nonsubject sources. Imports of towers and lattice masts from subject and nonsubject sources were present along with the domestic product during January 2017-August 2020. U.S. imports of towers and lattice masts from India were present in 20 of the 44 months, entering more frequently in 2019 and January-August 2020. U.S. imports of towers and lattice masts from Malaysia were present in 11 of the 44 months with all of those imports entering the United States during May 2019-August 2020. U.S. imports of towers and lattice masts from Spain were present in 43 of the 44 months, entering most frequently during July-October 2017, April-August 2018, and March-August 2020. U.S. imports of towers and lattice masts from nonsubject sources were present during each of the 44 months.

Table IV-5
Towers and lattice masts: U.S. imports by month, January 2017 through August 2020

U.S. imports	India	Malaysia	Spain	Subject Sources	Nonsubject sources	All import sources
	Value (1,000 dollars)					
2017.-- January	---	---	129	129	7,698	7,827
February	172	---	64	235	10,737	10,973
March	---	---	134	134	14,986	15,121
April	---	---	29,081	29,081	13,045	42,125
May	---	---	20,161	20,161	23,307	43,468
June	---	---	9,802	9,802	19,076	28,878
July	---	---	19,786	19,786	20,483	40,269
August	---	---	6,606	6,606	14,781	21,387
September	15	---	3,513	3,528	7,890	11,418
October	---	---	1,796	1,796	7,535	9,331
November	---	---	301	301	12,166	12,467
December	---	---	127	127	8,919	9,046
2018.-- January	---	---	4,589	4,589	998	5,587
February	21	---	---	21	741	762
March	---	---	142	142	6,568	6,709
April	---	---	29	29	6,952	6,981
May	---	---	13,451	13,451	29,874	43,325
June	---	---	48	48	9,295	9,343
July	---	---	7,272	7,272	26,476	33,747
August	---	---	2,534	2,534	49,381	51,915
September	---	---	105	105	18,470	18,575
October	---	---	408	408	3,515	3,923
November	---	---	504	504	40,606	41,110
December	---	---	187	187	25,507	25,694
2019.-- January	---	---	5,489	5,489	19,800	25,290
February	---	---	649	649	11,626	12,275
March	183	---	1,186	1,369	10,900	12,270
April	68	---	553	622	9,469	10,091
May	363	4,163	4,876	9,401	21,278	30,679
June	253	---	914	1,168	43,475	44,643
July	83	---	207	290	63,221	63,511
August	55	12,329	8,543	20,927	65,949	86,876
September	---	---	757	757	42,743	43,500
October	19,819	5,874	436	26,129	29,329	55,457
November	9,973	6,120	328	16,420	48,867	65,287
December	3,248	---	28	3,277	51,351	54,627
2020.-- January	11,230	---	199	11,429	25,712	37,141
February	9,226	6,082	11,081	26,390	27,945	54,335
March	17,415	1,662	16,824	35,902	41,386	77,288
April	26,098	10,796	7,881	44,775	25,669	70,445
May	7,274	9,437	12,436	29,147	35,081	64,228
June	9,046	10,502	23,605	43,154	62,142	105,295
July	9,320	12,197	29,580	51,097	45,732	96,830
August	29,568	11,490	20,800	61,858	60,261	122,119

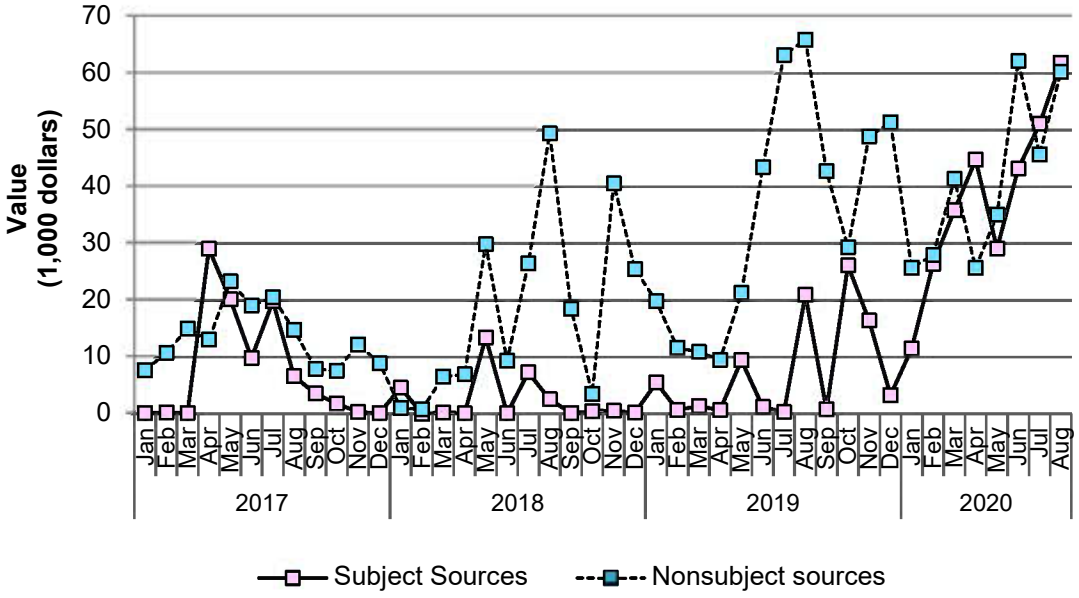
Source: Compiled from official U.S. import statistics using HTS statistical reporting number 7308.20.0020, accessed October 28, 2020.

Figure IV-2
Towers and lattice masts: U.S. imports from individual subject sources, by month, January 2017 through August 2020



Source: Compiled from official U.S. import statistics using HTS statistical reporting number 7308.20.0020, accessed October 28, 2020.

Figure IV-3
Towers and lattice masts: U.S. imports from aggregated subject and nonsubject sources, by month, January 2017 through August 2020



Source: Compiled from official U.S. import statistics using HTS statistical reporting number 7308.20.0020, accessed October 28, 2020.

Apparent U.S. consumption and market shares

Table IV-6 and figure IV-4 present data on apparent U.S. consumption for wind towers for the total market.[11]

Table IV-6
Wind towers: Apparent U.S. consumption, total market, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. producers' U.S. shipments	2,673	2,698	2,964	1,447	1,540
U.S. importers' U.S. shipments from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	1,073	1,054	1,840	895	1,207
Apparent U.S. consumption	3,746	3,752	4,804	2,342	2,747
	Value (1,000 dollars)				
U.S. producers' U.S. shipments	843,586	859,598	995,106	470,559	531,680
U.S. importers' U.S. shipments from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	281,963	238,360	467,294	214,243	343,352
Apparent U.S. consumption	1,125,549	1,097,958	1,462,400	684,802	875,032

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

[11] According to the petitioner, demand for wind towers is driven by demand for wind turbines and the installation of wind turbines in wind projects. Petitioner's postconference brief, p. 10. Additionally, AWEA notes that government incentives and the accelerating pace of coal-fired electricity retirements are generating more demand for new wind projects. AWEA's postconference brief, pp. 17-18. See Part II for additional information on demand factors. Data on apparent U.S. consumption in the merchant market is presented in appendix C.

Figure IV-4
Wind towers: Apparent U.S. consumption, total market, 2017-19, January to June 2019, and January to June 2020

* * * * * * *

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

The quantity of apparent U.S. consumption increased by *** percent during 2017-19 and was *** percent higher in interim 2020 than in interim 2019. The increase in apparent U.S. consumption during 2017-19 largely reflects the increases in U.S. producers' U.S. shipments and U.S. importers' U.S. shipments of imports from nonsubject sources, which were both greater on an aggregate basis than the increase in U.S. importers' U.S. shipments of imports from subject sources. The difference in apparent U.S. consumption between the interim periods can be attributed to U.S. importers' U.S. shipments of imports from subject sources, particularly India and Spain. The value of apparent U.S. consumption increased irregularly by *** percent during 2017-19 and was *** percent higher in interim 2020 than in interim 2019.

Table IV-7 presents data on market shares for the total market. After increasing by *** percentage points from 2017 to 2018, U.S. producers' market share, by quantity, decreased by *** percentage points from 2018 to 2019, ending *** percentage points lower in 2019 than in 2017. It was *** percentage points lower in interim 2020 than in interim 2019. After decreasing by *** percentage points from 2018 to 2019, the market share of subject imports, by quantity, *** percent during 2017-19. However, the market share of subject imports, by quantity, was *** percentage points higher in interim 2020 than in interim 2019. The market share of nonsubject imports, by quantity, increased by *** percentage points from 2017 to 2019 and was *** percentage points lower in interim 2020 than in interim 2019.

Table IV-7
Wind towers: Market shares, total market, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
Apparent U.S. consumption	3,746	3,752	4,804	2,342	2,747
	Share of quantity (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
Apparent U.S. consumption	1,125,549	1,097,958	1,462,400	684,802	875,032
	Share of value (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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 2017-19, raw materials' share of COGS ranged between 68.8 percent (2017) and 75.9 percent (2019).[1] In some cases, wind tower purchasers (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.[2] In these situations, the negotiations take place over "conversion price contracts," described below.

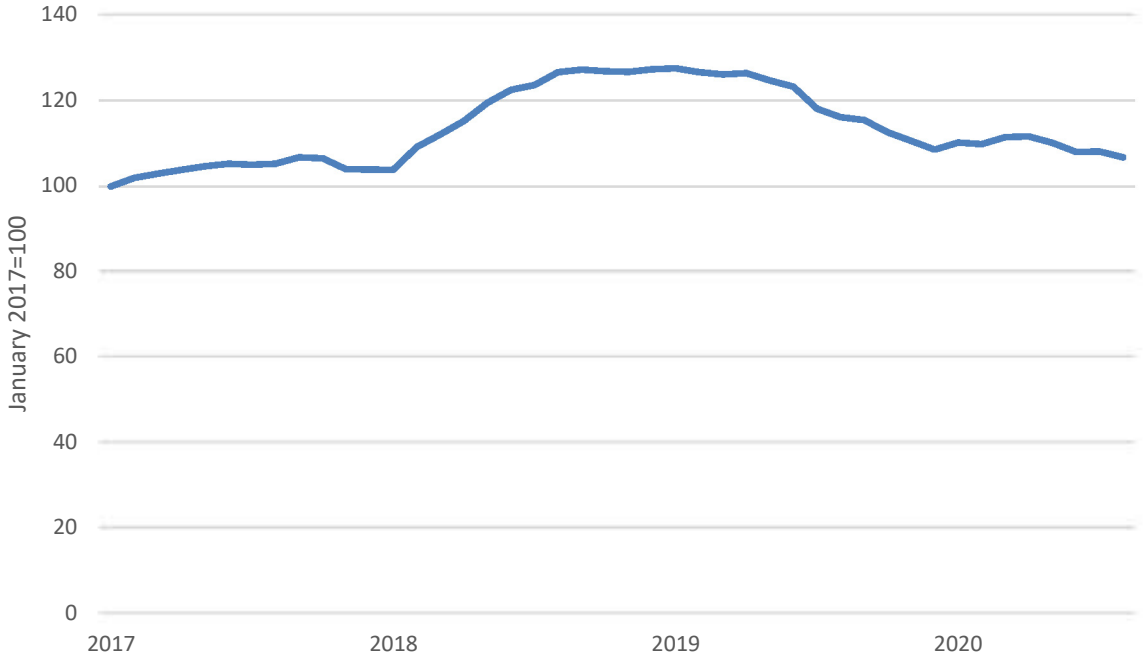
Steel plate is the principal raw material used in making wind towers, along with flanges, paint, and interior parts.[3] (See Part VI for detailed cost breakdowns.) As shown in figure V-1, the producer price index (PPI) for hot-rolled steel plate bars, plate, and structural shapes increased somewhat in the beginning of 2017, and then more substantially in the beginning of 2018, before decreasing over the course of 2019, almost back to 2017 levels. Prices from January through September 2020 fluctuated within a small range.

[1] These data reflect all U.S. production, whether for the merchant market or transfers to related firms.

[2] Publication 5101, p. V-1.

[3] Publication 5101, p. V-1.

Figure V-1
Producer price index: Hot-rolled steel bar, plate, and structural shapes, January 2017 to September 2020



Source: Bureau of Labor Statistics vis the St. Louis Federal Reserve Bank, accessed October 5, 2020.

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 effected their raw material costs and the prices of wind towers. U.S. producers indicated that the section 232 tariffs did not reduce the cost of raw materials, but otherwise responses varied. *** reported the section 232 tariffs did not change the price of raw materials. *** reported the section 232 tariffs caused the price of raw materials to fluctuate. (***) reported that the section 232 tariffs had led to an increase in steel costs. Most responding U.S. producers indicated that the section 232 tariffs either did not change the price of wind towers (***) or caused the price of wind towers to fluctuate (***). Only *** reported it had led to an increase in wind tower prices.

Four of six responding U.S. producers described raw material prices as having fluctuated since January 1, 2017; the other two reported raw material prices had increased. Most

importers (4 of 6 responding), in contrast, reported raw material costs had increased.[4] Three of the four reported that tariffs had contributed to the increase in steel prices.

Transportation costs to the U.S. market

During 2019, transportation costs for wind towers shipped from subject countries to the United States averaged 14.8 percent for India, 5.3 percent for Malaysia, and 9.3 percent for Spain. These estimates were derived from official import data and represent transportation and other charges on imports.[5]

U.S. inland transportation costs

Inland shipping costs typically account for a substantial share of the total delivered cost of wind towers and are usually the responsibility of the purchaser or importer. Petitioners indicated that wind towers typically are placed in a storage yard facility after production, and later retrieved by the customer.[6] In questionnaire responses, five of six responding U.S. producers[7] reported 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 three (***) responding importers reported that they arranged transportation of U.S. produced wind towers and two (***) of three[8] reported that they typically arrange transportation of their imports.

Since most U.S. producers do not arrange transportation, they did not report U.S. inland transportation costs to their customers.[9] U.S. importers reported that U.S. inland transportation costs accounted for *** percent of the cost of domestically produced wind towers and reported *** percent of the cost of for imported wind towers.[10]

---

[4] One importer reported the price of raw materials had not changed and one reporter the price of raw materials had fluctuated.

[5] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2018 and then dividing by the customs value based on the HTS statistical reporting number 7308.20.0020.

[6] Conference transcript p. 77 (Blashford, Bourland).

[7] ***.

[8] *** did not arrange transportation of its imports.

[9] ***.

[10] Three importers (***) reported transportation costs for the U.S. product they purchased. One (***) reported transportation costs for imported product.

All responding U.S. producers reported that their f.o.b. prices were the same regardless of the distance shipped. In contrast, the two responding importers (***) reported that f.o.b. prices varied by shipping distance. ***.

Pricing practices

Pricing methods

U.S. producers and importers use transaction-by-transaction negotiations and contracts in their sales of wind towers. Five U.S. producers that sell wind towers reported using contracts for their sales of wind towers, and four reported using transaction-by-transaction negotiations (table V-1).[11] Most responding importers reported transaction-by-transaction price setting, one (***) reported pricing under contracts, and one reported other.[12]

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

Method	U.S. producers	Importers
Transaction-by-transaction	4	4
Contract	5	1
Set price list	---	---
Other	1	1
Responding firms	6	5

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

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

In 2019, most U.S. producers' sales were under long term contracts (table V-2). ***. Most sales of imported product, in 2019, were reported to be spot sales. Three U.S. producers reported selling wind towers under short-term contracts, one reported annual contracts, and two also sold under long-term contracts in 2019.[13] Four producers reported the characteristics of short-term contracts.[14]

[11] One ***.
[12] ***.
[13] ***.
[14] Some firms that responded to this question did not have contracts in 2019.

Short-term contracts lasted from 4 to 6 months while long-term contracts were three years long. *** reported that all sales were spot sales. *** reported that all sales were under short-term contracts. *** reported that all sales were under one-year contracts.[15]

Table V-2
Wind towers: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2019

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

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

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

Two U.S. producers indicated that their short-term contracts allow for price renegotiation, two indicated that their short-term contracts do not. All four responding producers report that short-term contracts fix price and quantity. Two reported that prices were indexed to raw materials, and two reported that they were not. Both responding producers reported long-term contracts allowed price renegotiations, and both reported long-term contracts fix quantities.[16] One reported the price in long-term contracts were indexed to raw material costs.[17] According to petitioners, contracts include mechanisms to renegotiate product changes.[18]

Petitioners stated that sales have been shifting from long term contracts to more project based sales.[19] Long-term contracts commit purchasers to purchase a minimum volume over time and create smooth production in wind tower producer plants making the need for labor and capacity utilization more even.[20] Petitioners state, however, that some OEMs refuse to honor their contracts, delaying purchases committed to in the contracts or asking for

[15] ***.
[16] One of these also reported long-term contracts fixed price.
[17] One importer (***) reported using contracts, and stated that ***.
[18] Conference transcript, p. 75, 76 (Bourland, Blashford).
[19] Conference transcript, pp. 50-51 (Blashford, Bourland).
[20] Conference transcript, p. 75, 93 (Bourland, Blashford).

producers to renegotiate their conversion price during the contract.[21] According to petitioners, wind tower producers reserve capacity for the product under long term contracts 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.[22] Petitioners added that prices and quantities tend to lag changes in the market and reflect competition from earlier periods.[23]

Conversion price contracts

Wind tower transactions are frequently 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 its inputs.[24] The wind tower producer negotiates the conversion price which includes labor, the cost of some inputs such as paint and weld wire, and any mark-up.[25] Conversion prices as a ratio to net sales declined from *** percent in 2017 to *** percent in 2019 and were *** percent in interim 2020.

Sales terms and discounts

Five out of six responding U.S. producers reported that they typically quote prices on an f.o.b. basis.[26] Two producers reported no discount policy, and three reported prompt payment discounts. Most importers install wind towers rather than sell wind towers and all responding importers reported that both U.S. produced and imported wind towers were typically sold on a delivered basis. All five responding importers reported no discount policy.

[21] Conference transcript, pp. 21-22 (Bourland).
[22] Conference transcript, p. 94 (Blashford).
[23] Petitioners' postconference brief, p. 12.
[24] Conference transcript, pp. 52 (Blashford).
[25] Conference transcript, pp. 21-22, 73, 84 (Bourland).
[26] ***.

Price and purchase cost data

The Commission requested U.S. producers provide quarterly data for the total quantity and f.o.b. value of the following wind tower types sold to unrelated U.S. customers during January 2017 to June 2020. Firms that imported these products from India, Malaysia, and Spain for production of wind turbines were requested to provide their landed duty paid cost data.[27]

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

Five U.S. producers provided usable pricing data for sales of the requested products and two importers[28] provided usable purchase cost data, although not all firms reported pricing or purchase costs for all products for all quarters.[29] Pricing data reported by these firms accounted

[27] Petitioners requested that the Commission collect bid data for pricing. Petitioners' postconference brief, pp. 30-32. In past investigations, the Commission attempted to collected bid data. Some firms stated that they could not provide it in the format requested because their method of purchasing wind towers did not involve bids on specific wind towers. Publication 5101, p. V-23. ***.

[28] Importers *** provided purchase cost data for Malaysia and Spain respectively. Importer *** did not provide purchase cost data despite a number of requests and additional staff instructions on how to provide these data. *** did not import from subject countries.

[29] Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

for approximately all of U.S. producers' shipments of wind towers in 2019. Purchase cost data accounted for *** percent of imports from Malaysia and *** percent of imports from Spain in 2019; not purchase cost data was reported for India. Landed-duty paid purchase cost data for imports from Malaysia and Spain, where available, are presented in tables V-3 to V-6, along with U.S. producers' sales prices.[30]

Importers reporting import purchase cost data were asked to provide additional information regarding the costs and benefits of directly importing wind towers.

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. Firms were also asked to identify specific additional costs they incurred as a result of importing wind towers; none responded.

*** 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 it did not compare costs of purchasing from either U.S. producers or importers.

*** identified benefits from importing wind towers directly instead of purchasing from U.S. producers or importers, reporting that it purchased based on availability.

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 its imports were not less expensive than if the firm purchased from U.S. importers or U.S. producers. As a result no importer estimated savings from importing directly.

[30] 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.

Table V-3
Wind towers: Import landed duty-paid purchase costs and domestic prices, and quantities of product 1, and price-cost differentials, by quarter, January 2017 to June 2020

Period	United States		Malaysia		
	Price (dollars per unit)	Quantity (units)	LDP value (dollars per unit)	Quantity (units)	Price-cost differential (percent)
2017: Jan.-Mar.	***	***	***	***	***
Apr.-June	***	***	***	***	***
July-Sept.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***
Apr.-June	***	***	***	***	***
July-Sept.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***
Apr.-June	***	***	***	***	***
July-Sept.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***
Apr.-June	***	***	***	***	***

Note: Product 1: Wind towers, more than 80 meters but less than or equal to 90 meters in height.

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

Figure V-2
Wind towers: U.S. producer prices and import purchase costs, and quantities, of product 1 by quarter, January 2017 to June 2020

* * * * * * *

Product 1: Wind towers, more than 80 meters but less than or equal to 90 meters in height

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

Table V-4
Wind towers: Import landed duty-paid purchase costs and domestic prices, and quantities of product 2, and price-cost differentials, by quarter, January 2017 to June 2020

Period	United States	
	Price (dollars per unit)	Quantity (units)
2017: Jan.-Mar.	***	***
Apr.-June	***	***
July-Sept.	***	***
Oct.-Dec.	***	***
2018: Jan.-Mar.	***	***
Apr.-June	***	***
July-Sept.	***	***
Oct.-Dec.	***	***
2019: Jan.-Mar.	***	***
Apr.-June	***	***
July-Sept.	***	***
Oct.-Dec.	***	***
2020: Jan.-Mar.	***	***
Apr.-June	***	***

Note: Product 2: Wind towers, more than 90 meters but less than or equal to 100 meters in height.

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

Figure V-3
Wind towers: U.S. producer prices and import purchase costs, and quantities, of product 2 by quarter, January 2017 to June 2020

* * * * * * *

Product 2: Wind towers, more than 90 meters but less than or equal to 100 meters in height

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

Table V-5
Wind towers: Import landed duty-paid purchase costs and domestic prices, and quantities of product 3, and price-cost differentials, by quarter, January 2017 to June 2020

Period	United States		Spain		
	Price (dollars per unit)	Quantity (units)	LDP value (dollars per unit)	Quantity (units)	Price-cost differential (percent)
2017: Jan.-Mar.	***	***	***	***	***
Apr.-June	***	***	***	***	***
July-Sept.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***
Apr.-June	***	***	***	***	***
July-Sept.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***
Apr.-June	***	***	***	***	***
July-Sept.	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***
Apr.-June	***	***	***	***	***

Note: Product 3: Wind towers, more than 100 meters but less than or equal to 110 meters in height.

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

Figure V-4
Wind towers: U.S. producer prices and import purchase costs, and quantities, of product 3 by quarter, January 2017 to June 2020

* * * * * * *

Product 3: Wind towers, more than 100 meters but less than or equal to 110 meters in height

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

Table V-6
Wind towers: Import landed duty-paid purchase costs and domestic prices, and quantities of product 4, and price-cost differentials, by quarter, January 2017 to June 2020

Period	United States	
	Price (dollars per unit)	Quantity (units)
2017: Jan.-Mar.	***	***
Apr.-June	***	***
July-Sept.	***	***
Oct.-Dec.	***	***
2018: Jan.-Mar.	***	***
Apr.-June	***	***
July-Sept.	***	***
Oct.-Dec.	***	***
2019: Jan.-Mar.	***	***
Apr.-June	***	***
July-Sept.	***	***
Oct.-Dec.	***	***
2020: Jan.-Mar.	***	***
Apr.-June	***	***

Note: Product 4: Wind towers, more than 110 meters but less than or equal to 120 meters in height.

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

Figure V-5
Wind towers: U.S. producer prices and import purchase costs, and quantities, of product 4 by quarter, January 2017 to June 2020

* * * * * * *

Product 4: Wind towers, more than 110 meters but less than or equal to 120 meters in height

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

Price and purchase cost trends

Table V-7 summarizes the price trends by country and by product. Only domestically produced product *** prices were reported over the entire period. Product *** prices decreased by *** percent during January 2017 to June 2020. Because prices were not available over the entire period for other products, quarterly changes are also shown in the table V-7. In table V-7, quarterly domestic price decreases ranged from *** percent, while one product, product ***, showed an average quarterly increase of *** percent. Landed duty-paid costs were reported only for two products. Product *** had an average quarterly increase of *** percent while product *** had an average quarterly decrease of *** percent.

Table V-7
Wind towers: Summary of weighted-average domestic f.o.b. prices and importer purchase costs, for products 1-4, by country

Item	Number of quarters	Low price (per unit)	High price (per unit)	Change in price over the period (percent)	Quarterly change in price
Product 1					
United States	***	***	***	***	***
Malaysia purchase cost	***	***	***	***	***
Product 2					
United States	***	***	***	***	***
Product 3					
United States	***	***	***	***	***
Spain purchase cost	***	***	***	***	***
Product 4					
United States	***	***	***	***	***

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

Price and purchase cost comparisons

Price-cost comparisons

As shown in table V-8, landed duty-paid costs for wind towers imported from Malaysia, were below the sales price for U.S.-produced product in all *** instances (*** units) and those from Spain were lower in all *** instances (*** units). Price-cost differentials ranged from *** percent for Malaysia and *** percent for Spain.

Table V-8
Wind towers: Comparisons of import purchase costs and U.S.-producer sales prices, by product and by country, January 2017 to June 2020

Source	Import purchase cost data lower than U.S. price				
	Number of quarters	Quantity (units)	Average Price-Cost Difference (percent)	Price-Cost Difference (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 3	***	***	***	***	***
Total, lower than U.S.	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Total, lower than U.S.	***	***	***	***	***

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

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

Lost sales and lost revenue

Four of the six responding U.S. producers reported that they had to either reduce prices or roll back announced price increases, and that they had lost sales.[31] Two U.S. producers (***) submitted lost sales and lost revenue allegations. These U.S. producers identified 10 firms with which they lost sales or revenue (5 consisting lost sales allegations, and 5 consisting of both types of allegations).[32] Only one lost sale/lost revenue allegation identified the country source (Spain). Lost sales or lost revenue were alleged for February 2017 through September 2020.

The lost sales/lost revenue questions were sent to all firms identified by the petitioner as firms to which they had lost sales or lost revenue. Staff contacted 10 purchasers and received responses from five purchasers. Responding purchasers reported purchasing and importing 12,558 wind towers during 2017-19 (tables V-9 and V-10).

[31] ***.

[32] 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.

Table V-9
Wind towers: Purchasers' reported purchases and imports, 2017-19

Purchaser	Purchases in 2017-19 (units)			Change in domestic share (pp, 2017-19)	Change in subject country share (pp, 2017-19)
	Domestic	Subject	All other		
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	***	***	***	***	***

Note: All other includes all other sources and unknown sources.
Note: Percentage points (pp) change: Change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.

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

Table V-10
Wind towers: Purchasers' reported of purchases and imports, and changes in share of purchases, by country

Country	Quantity (units)			Change (percent)
	2017	2018	2019	2017-19
United States	***	***	***	***
India	***	***	***	***
Malaysia	***	***	***	***
Spain	***	***	***	***
Subject sources	***	***	***	***
All other sources	***	***	***	***
All sources	***	***	***	***

Note: Percentage points (pp) change: Change in the share of the firm's total purchases of domestic and/or subject country imports between years.

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

During 2019, responding purchasers purchased 59.7 percent of their total purchases/imports from U.S. producers, 2.8 percent from India, 2.4 percent from Malaysia, 0.4 percent from Spain, and 34.6 percent from nonsubject countries. Purchasers were asked about changes in their purchasing patterns from different sources since 2017.[33] One purchaser (***) reported increased purchases, one (***) reported constant purchases and two (***) reported fluctuating purchases of U.S. wind towers. The explanations for increasing purchases of domestic product was it had ***. One purchaser *** explained why its purchases of U.S. produced wind towers had fluctuated. It reported that it has ***

[33] None of the responding purchasers indicated that they did not know the source of the wind towers they purchased.

***. One purchaser (***) reported fluctuating purchases from India but provided no explanation. Two purchasers (***) reported increasing purchases from Malaysia. Reasons given for the increase include: ***. ***. One firm each reported increasing (***) and fluctuating purchases from Spain (***) but neither provided any explanation.

Of the five responding purchasers, one (***) reported that, since 2017, it had purchased or imported wind tower from India, three (***) reported purchases/imports from Malaysia, and two (***) from Spain instead of U.S.-produced product. Three of these purchasers (***) reported that subject import prices were lower than U.S.-produced product, and one of these (***) purchasers reported that price was a primary reason for the decision to purchase imported product (from Malaysia) rather than U.S.-produced product. *** estimated it purchased *** wind towers from Malaysia instead of domestic product[34] (tables V-11 and V-12). Purchasers identified availability/capacity as non-price reasons for purchasing imported rather than U.S.-produced product. Additional reasons included regional availability and ability to use rail transportation.

[34] ***.

Table V-11
Wind towers: Purchasers' responses to purchasing subject imports instead of domestic product

Purchaser	Purchased imports instead of domestic	Imports priced lower	If purchased imports instead of domestic, was price a primary reason		
			Yes/No	If Yes, quantity (units)	If No, non-price reason
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Totals (if applicable)	Yes--4; No—1	Yes--3; No--1	Yes--1; No—3	***	

Note: ***

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

Table V-12
Wind towers: Purchasers' responses to purchasing subject instead of domestic, by country

Source	Count of purchasers reporting subject instead of domestic	Count of purchasers reported that imports were priced lower	Count of purchasers reporting that price was a primary reason for shift	Quantity subject purchased (units)
India	1	1	---	***
Malaysia	3	3	1	***
Spain	2	1	---	***
Any subject source	4	3	1	***

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

Of the five responding purchasers, two reported that U.S. producers had not reduced prices in order to compete with lower-priced imports from India, Malaysia, and Spain; the other two 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 U.S. product has the advantage in logistics. In addition, 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 2019, *** 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 (2017 through January-June 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 and gross profit or loss* section below.

Operations on wind towers

Table VI-1 and table VI-2 present wind tower financial results and corresponding changes in average per tower values, respectively.[5] [6] Company-specific financial information is presented in table VI-3.

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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.

[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 reportedly 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. This product and customer diversification initiative reportedly did not impact Broadwind's wind tower operations. Conference transcript, p. 82 (Blashford).

[5] Financial results specific to commercial sales only are presented in Appendix C.

[6] The U.S. industry's average per tower sales values reflect the impact of incremental increases in tower height/weight during the period, as well as changes in company-specific market share. Because its utility under these circumstances appears limited, a variance analysis is not presented.

Table VI-1
Wind towers: Results of operations of U.S. producers, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (towers)				
Commercial sales	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
Total net sales	2,666	2,698	2,964	1,447	1,540
	Value (1,000 dollars)				
Commercial sales	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
Total net sales	843,586	859,598	995,106	470,559	531,680
Cost of goods sold.-- Steel plate	306,736	360,769	420,930	201,103	256,600
Flanges	42,538	42,316	57,612	26,694	31,666
Other raw materials	151,168	156,104	179,763	84,726	88,772
Total raw materials	500,442	559,189	658,305	312,523	377,038
Direct labor	89,302	98,581	112,036	49,141	54,092
Other factory costs	137,929	131,595	134,240	66,947	65,600
Total COGS	727,673	789,365	904,581	428,611	496,730
Gross profit or (loss)	115,913	70,233	90,525	41,948	34,950
SG&A expenses	28,110	25,318	28,142	13,770	13,470
Operating income or (loss)	87,803	44,915	62,383	28,178	21,480
Interest expense	***	***	***	***	***
All other expenses	***	***	***	***	***
All other income	***	***	***	***	***
Net income or (loss)	85,025	50,860	57,087	25,431	22,075
Depreciation/amortization	40,715	41,460	39,420	19,201	14,103
Cash flow	125,740	92,320	96,507	44,632	36,178
	Ratio to net sales (percent)				
Cost of goods sold.-- Steel plate	36.4	42.0	42.3	42.7	48.3
Flanges	5.0	4.9	5.8	5.7	6.0
Other raw materials	17.9	18.2	18.1	18.0	16.7
Total raw materials	59.3	65.1	66.2	66.4	70.9
Direct labor	10.6	11.5	11.3	10.4	10.2
Other factory costs	16.4	15.3	13.5	14.2	12.3
Average COGS	86.3	91.8	90.9	91.1	93.4
Gross profit or (loss)	13.7	8.2	9.1	8.9	6.6
SG&A expenses	3.3	2.9	2.8	2.9	2.5
Operating income or (loss)	10.4	5.2	6.3	6.0	4.0
Net income or (loss)	10.1	5.9	5.7	5.4	4.2

Table continued on next page.

Table VI-1—Continued
Wind towers: Results of operations of U.S. producers, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Ratio to total COGS (percent)				
Cost of goods sold.— Steel plate	42.2	45.7	46.5	46.9	51.7
Flanges	5.8	5.4	6.4	6.2	6.4
Other raw materials	20.8	19.8	19.9	19.8	17.9
Total raw materials	68.8	70.8	72.8	72.9	75.9
Direct labor	12.3	12.5	12.4	11.5	10.9
Other factory costs	19.0	16.7	14.8	15.6	13.2
Average COGS	100.0	100.0	100.0	100.0	100.0
	Unit value (dollars per tower)				
Commercial sales	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
Total net sales	316,424	318,606	335,731	325,196	345,247
Cost of goods sold.-- Steel plate	115,055	133,717	142,014	138,979	166,623
Flanges	15,956	15,684	19,437	18,448	20,562
Other raw materials	56,702	57,859	60,649	58,553	57,644
Total raw materials	187,713	207,261	222,100	215,980	244,830
Direct labor	33,497	36,539	37,799	33,961	35,125
Other factory costs	51,736	48,775	45,290	46,266	42,597
Average COGS	272,946	292,574	305,189	296,207	322,552
Gross profit or (loss)	43,478	26,032	30,541	28,990	22,695
SG&A expenses	10,544	9,384	9,495	9,516	8,747
Operating income or (loss)	32,934	16,648	21,047	19,473	13,948
Net income or (loss)	31,892	18,851	19,260	17,575	14,334
	Number of firms reporting				
Operating losses	2	2	2	3	2
Net losses	2	3	1	2	2
Data	6	6	6	6	6

Note.--Based on this table, the following amounts are calculated for “effective conversion price” (total sales value minus total raw materials) and “conversion cost” (direct labor cost plus other factory costs):

	Ratio to net sales (percent)				
Effective conversion price	40.7	34.9	33.8	33.6	29.1
Conversion cost	26.9	26.8	24.7	24.7	22.5
	Ratio to total COGS (percent)				
Conversion cost	31.2	29.2	27.2	27.1	24.1
	Average value (per tower)				
Conversion cost	85,233	85,314	83,089	80,227	77,722

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

Table VI-2
Wind towers: Changes in AUVs, 2017-19, January-June 2019, and January-June 2020

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Commercial sales	***	***	***	***
Transfers to related firms	***	***	***	***
Total net sales	▲6.1	▲0.7	▲5.4	▲6.2
Cost of goods sold.-- Steel plate	▲23.4	▲16.2	▲6.2	▲19.9
Flanges	▲21.8	▼(1.7)	▲23.9	▲11.5
Other raw materials	▲7.0	▲2.0	▲4.8	▼(1.6)
Total raw materials	▲18.3	▲10.4	▲7.2	▲13.4
Direct labor	▲12.8	▲9.1	▲3.4	▲3.4
Other factory costs	▼(12.5)	▼(5.7)	▼(7.1)	▼(7.9)
Average COGS	▲11.8	▲7.2	▲4.3	▲8.9
	Change in AUVs (dollars per tower)			
Commercial sales	***	***	***	***
Transfers to related firms	***	***	***	***
Total net sales	▲19,307	▲2,182	▲17,125	▲20,050
Cost of goods sold.-- Steel plate	▲26,959	▲18,662	▲8,297	▲27,644
Flanges	▲3,482	▼(272)	▲3,753	▲2,115
Other raw materials	▲3,947	▲1,157	▲2,790	▼(909)
Total raw materials	▲34,388	▲19,548	▲14,840	▲28,850
Direct labor	▲4,302	▲3,042	▲1,260	▲1,164
Other factory costs	▼(6,446)	▼(2,961)	▼(3,485)	▼(3,669)
Average COGS	▲32,244	▲19,629	▲12,615	▲26,345
Gross profit or (loss)	▼(12,937)	▼(17,447)	▲4,510	▼(6,295)
SG&A expenses	▼(1,049)	▼(1,160)	▲111	▼(769)
Operating income or (loss)	▼(11,887)	▼(16,287)	▲4,399	▼(5,525)
Net income or (loss)	▼(12,632)	▼(13,041)	▲409	▼(3,241)

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

Table VI-3
Wind towers: Results of operations of U.S. producers, by firm, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Total net sales (towers)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	2,666	2,698	2,964	1,447	1,540
	Total net sales (1,000 dollars)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	843,586	859,598	995,106	470,559	531,680
	Cost of goods sold (1,000 dollars)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	727,673	789,365	904,581	428,611	496,730
	Gross profit or (loss) (1,000 dollars)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	115,913	70,233	90,525	41,948	34,950

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Table VI-3—Continued
Wind towers: Results of operations of U.S. producers, by firm, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	SG&A expenses (1,000 dollars)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	28,110	25,318	28,142	13,770	13,470
	Operating income or (loss) (1,000 dollars)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	87,803	44,915	62,383	28,178	21,480
	Net income or (loss) (1,000 dollars)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	85,025	50,860	57,087	25,431	22,075
	Effective conversion price to net sales ratio (percent)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	40.7	34.9	33.8	33.6	29.1

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Table VI-3—Continued
Wind towers: Results of operations of U.S. producers, by firm, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Conversion cost to net sales ratio (percent)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	26.9	26.8	24.7	24.7	22.5
	COGS to net sales ratio (percent)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	86.3	91.8	90.9	91.1	93.4
	Gross profit or (loss) to net sales ratio (percent)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	13.7	8.2	9.1	8.9	6.6
	SG&A expense to net sales ratio (percent)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	3.3	2.9	2.8	2.9	2.5

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Table VI-3—Continued
Wind towers: Results of operations of U.S. producers, by firm, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Operating income or (loss) to net sales ratio (percent)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	10.4	5.2	6.3	6.0	4.0
	Net income or (loss) to net sales ratio (percent)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	10.1	5.9	5.7	5.4	4.2
	Unit net sales value (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	316,424	318,606	335,731	325,196	345,247
	Unit steel plate cost (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	115,055	133,717	142,014	138,979	166,623

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Table VI-3—Continued
Wind towers: Results of operations of U.S. producers, by firm, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Unit flanges cost (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	15,956	15,684	19,437	18,448	20,562
	Unit other raw materials (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	56,702	57,859	60,649	58,553	57,644
	Unit total raw materials (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	187,713	207,261	222,100	215,980	244,830
	Unit direct labor (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	33,497	36,539	37,799	33,961	35,125

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Table VI-3—Continued
Wind towers: Results of operations of U.S. producers, by firm, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Unit other factory costs (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	51,736	48,775	45,290	46,266	42,597
	Unit conversion costs (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	85,233	85,314	83,089	80,227	77,722
	Unit COGS (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	272,946	292,574	305,189	296,207	322,552
	Unit gross profit or (loss) (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	43,478	26,032	30,541	28,990	22,695

Table continued on next page.

Table VI-3—Continued
Wind towers: Results of operations of U.S. producers, by firm, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Unit SG&A expenses (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	10,544	9,384	9,495	9,516	8,747
	Unit operating income or (loss) (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	32,934	16,648	21,047	19,473	13,948
	Unit net income or (loss) (dollars per tower)				
Arcosa	***	***	***	***	***
Broadwind	***	***	***	***	***
GRI Towers	***	***	***	***	***
Marmen	***	***	***	***	***
Ventower	***	***	***	***	***
Vestas	***	***	***	***	***
All firms	31,892	18,851	19,260	17,575	14,334

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

Revenue

In 2019, commercial sales and transfer sales accounted for *** percent and *** percent of total wind tower sales value, respectively. Vestas was the *** U.S. producer to report transfer sales.[7]

[7] ***. Email with attachments from *** on behalf of *** to USITC staff, October 28, 2020.

Quantity

Total sales quantity increased modestly in 2018 and was followed by a larger increase in 2019. On a company-specific basis, the directional pattern was mixed: *** reported relatively large percentage sales quantity *** in 2018 followed by *** in 2019, while the other U.S. producers reported *** sales quantities during the full-year period.[8] In January-June 2020 compared to January-June 2019, most U.S. producers reported either higher sales quantity (***) or static sales quantity (***). *** was the *** U.S. producer reporting a lower sales quantity (see footnote 27).

Value

While overall average per tower sales value increased throughout the period, average per tower commercial sales value fluctuated: declining in 2018, increasing in 2019, and then higher in January-June 2020 compared to January-June 2019.[9] ***.

U.S. producers vary in terms of how underlying sales values are determined and whether a negotiated "conversion price" is directly relevant. 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.[10] 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."[11] ***. ***

[8] ***. Email with attachments from ***, to USITC staff, October 26, 2020.

[9] U.S. producers generally indicated that changes in product mix reflect increasing tower height/weight. ***. Email with attachment from *** on behalf of *** to USITC staff, October 28, 2020.

[10] As described by a Broadwind company official, "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).

[11] Conference transcript, p. 22 (Bourland).

***. *** indicated that they generally do not formally negotiate separate conversion price contracts.[12]

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 68.8 percent of total COGS (2017) to 75.9 percent (January-June 2020).[13] Steel plate, the largest subcategory of raw material, ranged from 42.2 percent of COGS (2017) to 51.7 percent (January-June 2020),[14] followed by other raw material costs, ranging from 17.9 percent of total COGS (January-June 2020) to 19.8 percent (2018 and January-June 2019). Flanges ranged from 5.4 percent of total COGS (2018) to 6.4 percent (2019 and January-June 2020).[15]

[12] Email with attachments from ***, to USITC staff, October 26, 2020. Email with attachment from *** on behalf of *** to USITC staff, October 28, 2020. Email with attachments from *** on behalf of *** to USITC staff, October 28, 2020.

[13] *** reported purchasing material inputs from related suppliers. ***. *** U.S. producer questionnaire, response to III-7. ***. *** U.S. producer questionnaire, response to III-7. ***. *** U.S. producer questionnaire, response to III-7.

[14] ***. Submission by *** on behalf of ***, October 28, 2020. Similarly, Arcosa entered into long-term steel supply agreements prior to the 232 tariffs, which in turn mitigated cost increases passed through to end customers during the full-year period. USITC Publication 5101, p. VI-19, n. 23.

[15] On a company-specific basis, changes in average per tower other raw materials cost and flange cost was mixed between 2017 and 2018 (increasing and decreasing) and more uniform between 2018 and 2019 (increasing) (see table VI-3). ***. Submission by *** on behalf of ***, October 28, 2020.

Average per tower total raw material cost increased in 2018 and 2019. On a company-specific basis, table VI-3 shows that U.S. producers reported a relatively wide range of average per tower total raw material costs with directional patterns of change mixed between 2017 and 2018 (increasing and decreasing) and then more uniform between 2018 and 2019 (primarily increasing). The extent to which changes in primary raw material costs were mitigated by long-term supply agreements varied among the U.S. producers (see footnote 14).

In conjunction with differences in company-specific product mix, raw material costs also 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 flanges."[16] 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."[17]

[16] Conference transcript, p. 12 (Blashford).

[17] Conference transcript, p. 22 (Bourland). ***. *** U.S. producer questionnaire, response to III-4.E.

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]

***.[19] ***.[20]

***

[18] *** U.S. producer questionnaire, response to III.4.B. ***. *** U.S. producer questionnaire, response to III.4.C.

[19] *** U.S. producer questionnaire, response to III-4.B.

[20] *** U.S. producer questionnaire, responses to III-4.B and III-4.C.

***.[21]

Conversion cost

Primary conversion activity, inclusive of initial and secondary material preparation, includes activity such as can fabrication, flange attachment, internal component assembly, and coating application.[22] Total conversion cost (combined direct labor and other factory costs) ranged from 24.1 percent of total COGS (January-June 2020) to 31.2 percent (2017). In addition to factors such as model changes, the share of conversion cost to total COGS and average per tower conversion cost are impacted by production volume and corresponding capacity utilization.[23]

U.S. producers reported a mixed directional pattern of changes in company-specific average per tower conversion cost (increasing versus decreasing) between 2017 and 2018 followed by a more uniform directional pattern (declining) between 2018 and 2019. On a company-specific basis, table VI-3 shows that there was a relatively wide range of company-specific average per tower conversion costs. *** and *** reported the lowest and highest average per tower conversion costs, respectively, for all or the majority of the period. ***.

Gross profit or loss

As noted previously and while U.S. producers differ, primary raw material costs appear to be largely passed through, either directly or indirectly, in the sales price. As such, conversion price (actual or effective) and corresponding conversion costs, in conjunction with the number of towers sold, appear to be the most important variables explaining changes in the U.S. industry's total gross profit. Table VI-3 shows that U.S. producers reported a range of effective conversion price to net sales ratios.[24] While magnitudes varied, the effective conversion price

[21] *** U.S. producer questionnaire, responses to III-4.B and III-4.C.

[22] USITC Publication 5101, p. VI-22. Conference transcript, pp. 67-68 (Blashford). ***. Petitioner's postconference brief, Exhibit 24.

[23] USITC Publication 5101, p. VI-22.

[24] As defined previously, "effective conversion price" is the difference between sales value and raw material costs. It does not represent or refer to a transaction-specific conversion price. As noted previously, some U.S. producers negotiate a conversion price directly. In other instances, conversion price is indirectly negotiated in conjunction with agreed-upon input values.

to net sales ratio of most U.S. producers declined during the full-year period and was mixed (higher and lower) in January-June 2020 compared to January-June 2019. Most U.S. producers also reported a similar pattern with respect to their gross profit ratios (total gross profit or loss divided by total sales): most reporting declines during the full-year period followed by a more mixed directional pattern between the interim periods.

*** reported the highest company-specific gross profit ratios, albeit declining throughout the period. ***.[25] Of those U.S. producers reporting positive gross profit throughout all or most of the period, *** reported the lowest gross profit ratios with 2018 reflecting a gross loss. As shown in table VI-3, *** also reported operating losses in 2018 and 2019 (full year and interim period).[26] *** was the *** U.S. producer reporting gross losses *** the period with its largest gross loss reported in 2017.[27] With the exception of 2018 when its gross profit ratio declined, *** gross profit ratio remained within a relatively narrow range throughout most of the

[25] ***. *** U.S. producer questionnaire, response to III-9c.

[26] ***. *** U.S. producer questionnaire response to III-9c.

[27] ***. Email with attachments from ***, to USITC staff, October 26, 2020. ***. *** U.S. producer questionnaire, response to question III-9c.

period.[28] While *** gross profit ratio was in the same range as *** in 2017 and 2018, the company reported an operating loss in 2017. As described by ***.[29] *** gross profit ratios fluctuated during the full-year period and were negative for both interim periods.[30]

While the U.S. industry's total sales value increased throughout the full-year period, total gross profit declined to its lowest level in 2018 and then increased in 2019, remaining below the level reported in 2017. In general this pattern reflects the contraction in gross profit ratio in 2018 and relative stabilization in 2019. Notwithstanding the higher total sales value in January-June 2020 compared to January-June 2019, total gross profit was lower in January-June 2020 due to the continued contraction in gross profit ratio.

SG&A expenses and operating income or loss

Total selling, general, and administrative (SG&A) expenses declined to their lowest levels in 2018 and then increased to their highest levels in 2019. While declining somewhat during the period, corresponding SG&A expense ratios (total SG&A expenses divided by total sales) remained within a relatively narrow range. As such, the level 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 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

[28] ***. *** U.S. producer questionnaire, response to question III-9c.

[29] Email with attachment from *** on behalf of *** to USITC staff, October 28, 2020. ***. *** U.S. producer questionnaire, response to question III-9c.

[30] ***. Email with attachments from *** to USITC staff, October 26, 2020. ***. *** U.S. producer questionnaire, response to question III-9c.

reported during the period.[31] Other expenses of varying magnitudes were reported by *** U.S. producers.

While magnitudes of change differed, both operating income and net income followed the same pattern throughout the period: declining between 2017 and 2018, increasing between 2018 and 2019, and lower in January-June 2020 compared to January-June 2019.

Capital expenditures and research and development expenses

Table VI-4 presents the U.S. producers' capital expenditures and research and development (R&D) expenses related to wind tower operations and table VI-5 presents corresponding firm-specific narrative descriptions.

Table VI-4
Wind towers: Capital expenditures and R&D expenses of U.S. producers, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Capital expenditures (1,000 dollars)				
All firms	41,751	26,707	17,323	9,925	7,316
	Research and development expenses (1,000 dollars)				
All firms	***	***	***	***	***

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

[31] ***. Email from *** on behalf of *** to USITC staff, October 28, 2020. ***.

Table VI-5
Wind towers: Narrative descriptions of U.S. producers' capital expenditures and R&D expenses of U.S. producers since January 1, 2017

Capital expenditures	
Firm	**Narrative**
***	***
***	***
***	***
***	***
***	***
***	***
R&D expenses:	
Firm	**Narrative**
***	***
***	***
***	***
***	***
***	***
***	***

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

Assets and return on assets

Table VI-6 presents data on the U.S. producers' total net assets and operating return on net assets related to operations on wind towers.[32]

[32] With respect to a company's overall operations, staff notes that a total asset value (i.e., the bottom line value on the asset side of a company's balance sheet) reflects an aggregation of a number of current and non-current assets, which, in many instances, are not product specific. In most cases, allocation factors are necessary in order to report total asset values on a product-specific basis. The ability of U.S. producers to assign total asset values to discrete product lines affects the meaningfulness of operating return on net assets.

Table VI-6
Wind towers: U.S. producers' total net assets and operating return on net assets, 2017-19

Firm	Calendar year		
	2017	2018	2019
	Total net assets (1,000 dollars)		
All firms	411,357	433,347	335,183
	Operating return on assets (percent)		
All firms	21.3	10.4	18.6

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

Capital and investment

The Commission requested the U.S. producers of wind towers to describe any actual or potential negative effects on their return on investment or its growth, investment, ability to raise capital, existing development and production efforts (including efforts to develop a derivative or more advanced version of the product), or the scale of capital investments as a result of imports of wind towers from India, Malaysia, and Spain. Table VI-7 tabulates the responses regarding actual negative effects on investment, growth, and development, as well as anticipated negative effects. Table VI-8 presents the narrative responses of the U.S. producers regarding actual and anticipated negative effects on investment, growth, and development.

Table VI-7
Wind towers: Negative effects of imports from subject sources on investment, growth, and development since January 1, 2017

Item	No	Yes
Negative effects on investment	2	4
Cancellation, postponement, or rejection of expansion projects		2
Denial or rejection of investment proposal		1
Reduction in the size of capital investments		3
Return on specific investments negatively impacted		3
Other		1
Negative effects on growth and development	2	4
Rejection of bank loans		1
Lowering of credit rating		3
Problem related to the issue of stocks or bonds		1
Ability to service debt		3
Other		1
Anticipated negative effects of imports	2	4

Note.--***.

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

Table VI-8
Wind towers: Narrative responses of U.S. producers regarding actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2017

Effects/Firm	Narrative
Negative impact on investment:	
Cancellation, postponement, or rejection of expansion projects	
***	***
***	***
Denial or rejection of investment proposal	
***	***
Reduction in the size of capital investments	
***	***
***	***
***	***
Return on specific investments negatively impacted	
***	***
***	***
***	***

Table continued on next page.

Table VI-8—Continued
Wind towers: Narrative responses of U.S. producers regarding actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2017

Effects/Firm	Narrative
Negative impact on investment--continued:	
Other	
***	***
Negative impact on growth and development:	
Rejection of bank loans	
***	***
Lowering of credit rating	
***	***
***	***
***	***
Problem related to the issue of stocks or bonds	
***	***
Ability to service debt	
***	***
***	***
***	***
Other	
***	***

Table continued on next page.

Table VI-8—Continued
Wind towers: Narrative responses of U.S. producers regarding actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2017

Effects/Firm	Narrative
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 alleged 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 two firms: GRI Powergear Towers India Private Limited ("GRI Tower India") and Anand Engineering Products Private Limited ("Anand Engineering"). These firms' exports to the United States accounted for approximately *** percent of U.S. imports of wind towers from India in 2019. According to estimates requested of the responding Indian producers, the production of wind towers in India reported in questionnaires accounts for a majority of overall production of wind towers in India. Table VII-1 presents information on the wind tower operations of the responding producers and exporters in India.

Table VII-1
Wind towers: Summary data for producers in India, 2019

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	***	***	***	***	***	***
All firms	***	***	***	***	***	***

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

Changes in operations

Producers in India 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 character of their operations or organization relating to the production of wind towers since January 1, 2017. All reported responses are shown in table VII-2.

[3] These firms were identified through a review of information submitted in the petitions and contained in *** records.

Table VII-2
Wind towers: Reported changes in operations by producers in India, since January 1, 2017

Item / Firm	Reported changed in operations
Plant openings:	
***	***
Consolidations:	
***	***
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 tower operations of the responding producers and exporters in India. After remaining at *** units during 2017-18, responding Indian producers' collective production capacity increased by *** percent to *** units in 2019, as a result of ***. Their combined production capacity was *** percent higher in interim 2020 than in interim 2019. The difference in production capacity between the interim periods reflects *** since *** reported the same level of capacity in both interim periods. Anand Engineering and GRI Tower India's combined production capacity is projected to increase by *** percent to *** units in 2020 and *** in 2021.

After decreasing by *** percent from 2017 to 2018, responding Indian producers' collective production increased by *** percent from 2018 to 2019, ending *** percent higher in 2019 than in 2017. Both producers reported an irregular increase in production during 2017-19. Their collective production was *** percent higher in interim 2020 than in interim 2019. Responding Indian producers' production is projected to increase by *** percent to *** towers in 2020. *** production is projected to be *** percent higher in 2021 than in 2020.[4]

[4] ***. Email from ***, October 19, 2020.

Table VII-3
Wind towers: Data on the industry in India 2017-19, January to June 2019, January to June 2020, and projection calendar years 2020 and 2021

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (units)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Note: Projections for production and shipments in 2021 do not include *** projections.

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

As a result of their collective capacity increasing at a higher rate than their collective production, responding Indian producers' collective capacity utilization decreased from *** percent in 2017 to *** percent in 2019. The lower capacity utilization in 2018 reflects *** as the firm reported using ***.[5] Responding Indian producers' capacity utilization was *** percent in interim 2020, compared with *** percent in interim 2019. It is projected to be *** percent in 2020. *** capacity utilization is projected to be *** percent in 2021. ***.

Responding Indian producers' collective home market shipments, by quantity, fluctuated year to year, decreasing by *** percent from 2017 to 2018, and then increasing by *** percent from 2018 to 2019, ending *** percent higher in 2019 than in 2017. Both firms reported an irregular increase in home market shipments during 2017-19. The quantity of their collective home market shipments was *** percent higher in interim 2020 than in interim 2019. Responding Indian producers' collective home market shipments are projected to be *** percent higher in 2020. Anand Engineering's home market shipments are projected to be *** percent higher in 2021 than in 2020.

***. *** exported *** towers to the United States in 2019, equivalent to *** percent of its total shipments. *** export shipments to the United States were *** greater in interim 2020 than in interim 2019. *** export shipments to the United States is projected to be *** percent higher in 2020. *** is not expecting to export wind towers in 2020 or in 2021.

Alternative products

***.

[5] According to a representative from ***. Email from ***, October 19, 2020.

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 2019. The leading export markets for these towers and lattice masts from India, by value, in 2019 were Bangladesh, Afghanistan, Peru, and Nepal, accounting for 17.0 percent, 11.7 percent, 7.9 percent, and 7.4 percent, respectively. The United States accounted for 0.8 percent of all exports of these towers and lattice masts from India in 2019.

Table VII-4
Towers and lattice masts of iron or steel: Exports from India by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	1,567	641	2,887
Bangladesh	11,408	18,074	58,647
Afghanistan	31,854	30,246	40,267
Peru	1,007	13	27,157
Nepal	4,614	19,939	25,380
Nigeria	1,501	4,499	18,881
Pakistan	---	2,201	16,935
United Arab Emirates	4,789	18,117	14,104
Colombia	62,275	13,650	13,207
All other destination markets	202,495	149,463	127,413
All destination markets	321,510	256,844	344,878
	Share of value (percent)		
United States	0.5	0.2	0.8
Bangladesh	3.5	7.0	17.0
Afghanistan	9.9	11.8	11.7
Peru	0.3	0.0	7.9
Nepal	1.4	7.8	7.4
Nigeria	0.5	1.8	5.5
Pakistan	---	0.9	4.9
United Arab Emirates	1.5	7.1	4.1
Colombia	19.4	5.3	3.8
All other destination markets	63.0	58.2	36.9
All destination markets	100.0	100.0	100.0

Note: United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data. Export quantities not provided due to differences in units of measure amongst reporting countries. HS subheading 7308.20 contain products outside the scope of these investigations.

Source: Official export statistics under HS subheading 7308.20, as reported by Ministry of Commerce in the Global Trade Atlas database, accessed October 28, 2020.

The industry in Malaysia

The Commission issued foreign producers' or exporters' questionnaires to one firm, CS Wind Malaysia Sdn Bhd ("CS Wind Malaysia"), believed to produce and/or export wind towers from Malaysia.[6] CS Wind Malaysia provide 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 2019. 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 producers in Malaysia, 2019

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	***	***	***	***	***	***

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

Changes in operations

CS Wind Malaysia was asked to indicate whether it 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 character of their operations or organization relating to the production of wind towers since January 1, 2017. CS Wind Malaysia's responses are shown in table VII-6.

[6] This firm was identified through a review of information submitted in the petitions and contained in *** records.

Table VII-6
Wind towers: Reported changes in operations by Malaysian producer CS Wind Malaysia, since January 1, 2017

Item / Firm	Reported changed in operations
Plant openings:	
***	***
Expansions:	
***	***

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

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 2017-19, ending *** percent higher in 2019 than in 2017.[7] Its production capacity was *** higher in interim 2020 than in interim 2019.[8] It is projected to be *** higher in 2020 and *** from 2020 to 2021.[9] CS Wind Malaysia's production increased by *** from 2017 to 2018 and by *** percent from 2018 to 2019, resulting in an overall increase of *** during 2017-19. CS Wind Malaysia's production was *** higher in interim 2020 than in interim 2019. Its production is projected to be *** higher in 2020 than in 2019 and *** percent higher in 2021 than in 2020.

[7] ***.

[8] The difference in production capacity between the interim periods was ***. Email from ***, October 19, 2020.

[9] The projected increase in production capacity reflects the ***. Email from ***, October 19, 2020.

Table VII-7
Wind towers: Data for Malaysian producer CS Wind Malaysia, 2017-19, January to June 2019, January to June 2020, and projection calendar years 2020 and 2021

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (units)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

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

As a result of production increasing more than production capacity during 2017-19, CS Wind Malaysia's capacity utilization increased from *** percent in 2017 to *** percent in 2019.[10] It was *** percent in interim 2020, compared with *** percent in interim 2019. CS Wind Malaysia's capacity utilization is projected to be *** percent in 2020 and *** percent in 2021.

*** during 2017-19 or in interim 2020. ***, CS Wind Malaysia reported export shipments in each year during 2017-19 with *** export shipments in 2017 and 2018 going to non-U.S. markets. In 2019, CS Malaysia exported *** towers to the United States, equivalent to *** percent of its total export shipments. CS Wind Malaysia's export shipments to the United States were *** higher in interim 2020 than in interim 2019. It is projected to be *** higher in 2020, but then *** percent lower in 2021 than in 2020.

Alternative products

***.

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 2019. The leading export markets for these towers and lattice masts from Malaysia, by value, in 2019 were the United States, Australia, Singapore, and Nigeria, accounting for 66.2 percent, 20.9 percent, 6.7 percent, and 1.7 percent, respectively.

[10] The low capacity utilization in 2017 was due to ***. Email from ***, October 20, 2020.

Table VII-8
Towers and lattice masts of iron or steel: Exports from Malaysia by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	---	281	28,890
Australia	6,279	57,081	9,127
Singapore	302	269	2,912
Nigeria	---	---	734
Thailand	42	---	685
Cambodia	---	17	441
India	122	397	225
Oman	486	390	202
Indonesia	288	17	88
All other destination markets	1,241	2,047	310
All destination markets	8,761	60,499	43,613
	Share of value (percent)		
United States	---	0.5	66.2
Australia	71.7	94.4	20.9
Singapore	3.4	0.4	6.7
Nigeria	---	---	1.7
Thailand	0.5	---	1.6
Cambodia	---	0.0	1.0
India	1.4	0.7	0.5
Oman	5.6	0.6	0.5
Indonesia	3.3	0.0	0.2
All other destination markets	14.2	3.4	0.7
All destination markets	100.0	100.0	100.0

Note: United States shown at the top, all remaining top export destinations shown in descending order of 2019 data. Export quantities not provided due to differences in units of measure amongst reporting countries. HS subheading 7308.20 contains products outside the scope of these investigations.
Note: Shares and ratios shown as “0.0” represent values greater than zero, but less than “0.05” percent.

Source: Official export statistics under HS subheading 7308.20, as reported by the Department of Statistics Malaysia in the Global Trade Atlas database, accessed October 28, 2020.

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.[11] Usable responses to the Commission's questionnaire were received from two firms: GRI Renewable Industries ("GRI Renewable") and Windar Renovables S.L. ("Windar"). These firms' exports to the United States accounted for approximately *** percent of U.S. imports of wind towers from Spain in 2019. According to estimates requested of the responding Spanish producers, the production of wind towers in Spain reported in questionnaires accounts for a majority of overall production of wind towers in Spain. Table VII-9 presents information on the wind tower operations of the responding producers and exporters in Spain.

Table VII-9
Wind towers: Summary data for producers in Spain, 2019

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)
Windar	***	***	***	***	***	***
GRI Renewable	***	***	***	***	***	***
All firms	***	***	***	***	***	***

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

Changes in operations

Producers in Spain 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 character of their operations or organization relating to the production of wind towers since January 1, 2017. All reported responses are shown in table VII-10.

[11] These firms were identified through a review of information submitted in the petitions and contained in *** records. In addition to the responding Spanish producers, the Commission issued a foreign producers' or exporters' questionnaire to Haizea Wind Group. This firm did not submit a response to the Commission.

Table VII-10
Wind towers: Reported changes in operations by producers in Spain, since January 1, 2017

Item / Firm	Reported changed in operations
Plant closings:	
***	***
Consolidations:	
***	***
Other:	
***	***
***	***

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

Operations on wind towers

Table VII-11 presents information on the wind tower operations of the responding producers and exporters in Spain. Responding Spanish producers' collective production capacity increased irregularly by *** percent during 2017-19 with both firms reporting higher production capacity in 2019 than in 2017. Their collective production capacity was *** percent lower in interim 2020 than in interim 2019. The difference in production capacity between the interim periods reflects *** since *** reported the same level of capacity in both interim periods. Responding Spanish producers' collective production capacity is projected to be *** percent lower in 2020 than in 2019. *** production capacity is projected to ***, in 2020 and 2021.[12]

After decreasing by *** percent from 2017 to 2018, responding Spanish producers' collective production increased by *** percent from 2018 to 2019, ending *** percent higher in 2019 than in 2017. *** production increased in each year during 2017-19, while *** decreased in 2018 before increasing in 2019. Their collective production was *** percent lower in interim 2020 than in interim 2019. Responding Spanish producers' collective production is projected to be *** percent lower in 2020 than in 2019. *** production is projected to *** from 2020 to 2021.

[12] ***. Email from ***, October 19, 2020.

Table VII-11
Wind towers: Data on the industry in Spain, 2017-19, January to June 2019, January to June 2020, and projection calendar years 2020 and 2021

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (units)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Note: Projections for capacity, production, and shipments in 2021 do not include *** projections.

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

As a result of their production increasing at a higher rate than their production capacity, responding Spanish producers' collective capacity utilization increased from *** percent in 2017 to *** percent in 2019.[13] Their collective capacity utilization was *** percent in interim 2020, compared with *** percent in interim 2019. Responding Spanish producers' collective capacity utilization is projected to be *** percent in 2020. Windar's capacity utilization is projected to be *** percent.

Home market shipments accounted for a minority share of responding Spanish producers' total shipments in 2017 and 2018 and a slight majority in 2019 and interim 2020. Fluctuating year to year, their collective home market shipments, by quantity, decreased by *** percent from 2017 to 2018, and then increased by *** percent from 2018 to 2019, ending *** percent higher in 2019 than in 2017.[14] The quantity of responding Spanish producers' collective home market shipments was *** percent higher in interim 2020 than in interim 2019. They are projected to be *** percent lower in 2020.[15]

Export shipments accounted for a slight majority of responding Spanish producers' total shipments in 2017 and 2018 and a slight minority of total shipments in 2019 and interim 2020. However, exports to the United States accounted for a smaller and shrinking share of export shipments during 2017-19 as it decreased from *** towers in 2017 to *** towers in 2019. Export shipments to the United States was *** towers in interim 2020, compared with *** towers in interim 2019. It is projected to *** towers in calendar year 2020. *** does *** in 2021, ***.

[13] Windar's capacity utilization was *** GRI Renewable's in each year during 2017-19 and in interim 2020.

[14] ***.

[15] As discussed previously, ***. Email from ***, October 19, 2020. ***.

Alternative products

As shown in table VII-12, responding producers in Spain reported production of out-of-scope merchandise using the same machinery used to produce wind towers. This production accounted for a small minority of total production on the same machinery as wind towers in 2017 and 2018. There was no production of out-of-scope merchandise in 2019 or in interim 2020. ***.

Table VII-12
Wind towers: Overall capacity and production on the same equipment as in-scope production by producers in Spain, 2017-19, January to June 2019, January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
Overall capacity	***	***	***	***	***
Production: Wind towers	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production: Wind towers	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***

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

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 2019. The leading exports for these towers and lattice masts from Spain, by value, in 2019 were the Netherlands, France, Germany, and Greece, accounting for 26.1 percent, 20.0 percent, 15.9 percent, and 4.2 percent, respectively. The United States was the sixth largest export market for these towers and lattice masts of iron or steel from Spain in 2019, accounting for 3.7 percent of all exports by value.

Table VII-13
Towers and lattice masts of iron or steel: Exports from Spain by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	16,457	9,287	12,813
Netherlands	2,568	2,171	91,727
France	8,167	75,157	70,142
Germany	9,355	54,993	55,782
Greece	8,218	29,131	14,688
Mauritania	408	2,811	13,647
Russia	---	4,633	11,952
United Kingdom	8,971	24,860	10,902
Italy	8,503	18,497	10,383
All other destination markets	96,503	95,542	58,744
All destination markets	159,150	317,082	350,780
	Share of value (percent)		
United States	10.3	2.9	3.7
Netherlands	1.6	0.7	26.1
France	5.1	23.7	20.0
Germany	5.9	17.3	15.9
Greece	5.2	9.2	4.2
Mauritania	0.3	0.9	3.9
Russia	---	1.5	3.4
United Kingdom	5.6	7.8	3.1
Italy	5.3	5.8	3.0
All other destination markets	60.6	30.1	16.7
All destination markets	100.0	100.0	100.0

Note: United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data. Export quantities not provided due to differences in units of measure amongst reporting countries. HS subheading 7803.20 contain products outside the scope of these investigations.

Source: Official export statistics under HS subheading 7803.20, as reported by Eurostat in the Global Trade Atlas database, accessed October 28, 2020.

Subject countries combined

Table VII-14 presents summary data on wind tower operations of the reporting foreign producers in the subject countries.

Table VII-14
Wind towers: Data on the industry in subject countries, 2017-19, January to June 2019, January to June 2020, and projection calendar years 2020 and 2021

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (units)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Note: Projections for capacity, production, and shipments in 2021 do not include *** projections.

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 2017-19, with the majority of the increase occurring from 2018 to 2019. It was *** percent higher in interim 2020 than in interim 2019. Production capacity for the responding producers in the subject countries is projected to be *** percent higher in 2020. Production capacity for *** are projected *** from 2020 to 2021.[16]

Responding foreign producers' production in the subject countries increased irregularly by *** percent during 2017-19 and was *** percent higher in interim 2020 than in interim 2019. It is projected to be *** percent higher in 2020. *** collective projection is projected to be *** percent higher in 2021 than in 2020.[17] Responding foreign producers' capacity utilization increased from *** percent in 2017 to *** percent in 2019 and was *** percent in interim 2020, compared with *** percent in interim 2019. It is projected to be *** percent in 2020 and *** percent in 2021.

Responding foreign producers' collective home market shipments in the subject countries increased irregularly by *** percent during 2017-19 and was *** percent lower in interim 2020 than in interim 2019. It is projected to *** from 2019 to 2020. *** home market shipments are projected to be *** percent higher in 2021 than in 2020. Responding foreign producers' collective exports to the United States *** during 2017-19, with the all the increase occurring from 2018 to 2019. It was *** higher in interim 2020 than in interim 2019. Responding foreign producers' collective exports to the United States is projected to *** from 2019 to 2020. *** export shipments to the United States are projected to be *** percent lower in 2021 than in 2020.

[16] As discussed previously, ***. Email from ***, October 19, 2020. This firm is responsible for the perceived difference between projection year 2020 and projection year 2021.

[17] *** are unable to provide projections for its total shipments in 2021.

U.S. inventories of imported merchandise

Table VII-15 presents data on U.S. importers' reported end-of-period inventories of wind towers. *** end-of-period inventories of wind towers from subject sources during 2017-19 or interim 2020. *** end-of-period inventories of wind towers from nonsubject sources during 2017-19, ***. ***.

Table VII-15
Wind towers: U.S. importers' end-of-period inventories of imports by source, 2017-19, January to June 2019, and January to March 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Inventories (units); Ratios (percent)				
Imports from India Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Malaysia: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Spain: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from nonsubject sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from nonsubject sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from all import sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***

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

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of wind towers from India, Malaysia, or Spain after June 30, 2020. On an aggregate basis, the majority of arranged imports reported by responding U.S. producers are from Malaysia, with India accounting for the next largest share. Responding U.S. importers' reported arranged imports from Spain only for July-September 2020.

Table VII-16
Wind towers: Arranged imports, July 2020 through June 2021

Item	Period				
	Jul-Sep 2020	Oct-Dec 2020	Jan-Mar 2021	Apr-Jun 2021	Total
	Quantity (units)				
Arranged U.S. imports from.--					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Antidumping or countervailing duty orders in third-country markets

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.

Information on nonsubject countries

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 2017-19. *** reported importing from *** in Vietnam.[18] *** reported importing from *** in Korea, *** in Indonesia, and *** in Mexico.[19] *** reported importing from *** in China and *** in Korea.[20] *** reported importing from *** in Canada and *** in Korea.[21] *** reported importing from nonsubject sources.[22] *** reported importing from ***.[23]

[18] ***, importer questionnaire response.
[19] ***, importer questionnaire response.
[20] ***, importer questionnaire response.
[21] ***, importer questionnaire response.
[22] ***, importer questionnaire response.
[23] ***, importer questionnaire response.

Table VII-17
Tower and lattice masts of iron and steel: Global exports by source, 2017-19

Exporter	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	38,978	30,908	47,441
India	321,510	256,844	344,878
Malaysia	8,761	60,499	43,613
Spain	159,150	317,082	350,780
China	537,430	492,077	425,525
Denmark	484,550	506,869	266,078
Germany	158,224	194,414	252,699
Turkey	183,607	241,370	250,652
Indonesia	49,748	81,912	115,739
Netherlands	33,662	47,570	110,467
Canada	63,462	107,753	98,624
Belgium	1,381	3,398	80,611
All other exporters	735,916	1,001,951	658,793
All reporting exporters	2,776,379	3,342,647	3,045,899
	Share of value (percent)		
United States	1.4	0.9	1.6
India	11.6	7.7	11.3
Malaysia	0.3	1.8	1.4
Spain	5.7	9.5	11.5
China	19.4	14.7	14.0
Denmark	17.5	15.2	8.7
Germany	5.7	5.8	8.3
Turkey	6.6	7.2	8.2
Indonesia	1.8	2.5	3.8
Netherlands	1.2	1.4	3.6
Canada	2.3	3.2	3.2
Belgium	0.0	0.1	2.6
All other exporters	26.5	30.0	21.6
All reporting exporters	100.0	100.0	100.0

Note: United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data. Export quantities not provided due to differences in units of measure amongst reporting countries. HS subheading 7803.20 contain products outside the scope of these investigations.
Note: Shares and ratios shown as “0.0” represent values greater than zero, but less than “0.05” percent.

Source: Official exports statistics under HS subheading 7308.20 as reported by various national statistical authorities in the Global Trade Atlas database, accessed November 13, 2020.

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

APPENDIX B

LIST OF CONFERENCE WITNESSES

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

Those listed below appeared in the United States International Trade Commission's preliminary conference via videoconference:

Subject: Utility Scale Wind Towers from India, Malaysia, and Spain

Inv. Nos.: 701-TA-660-661 and 731-TA-1543-1545 (Preliminary)

Date and Time: October 21, 2020 - 9:30 a.m.

OPENING REMARKS:

In Support of Imposition (**Alan H. Price**, Wiley Rein LLP)

In Support of the Imposition of Antidumping and Countervailing Duty Orders:

Wiley Rein LLP
Washington, DC
on behalf of

Wind Tower Trade Coalition

Eric Blashford, Chief Executive Officer, Broadwind, Inc.

Wesley Bourland, Senior Vice President and General Manager, Arcosa Wind Towers

Amy E. Sherman, International Trade Analyst, Wiley Rein LLP

Alan H. Price)
Daniel B. Pickard)
) – OF COUNSEL
Robert E. DeFrancesco, III)
Laura El-Sabaawi)

INTERESTED PARTY IN OPPOSITION:

American Wind Energy Association ("AWEA")
Washington, DC

Johanna Jochum, Counsel

CLOSING REMARKS:

In Support of Imposition (**Daniel B. Pickard**, Wiley Rein LLP)

-END-

APPENDIX C

SUMMARY DATA

Total market

Table C-1
Wind towers: Summary data concerning the U.S. total market, 2017-19, January to June 2019, and January to June 2020
(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			January to June		Comparison years			Jan-Jun
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. total market consumption quantity:									
Amount	3,746	3,752	4,804	2,342	2,747	▲28.2	▲0.2	▲28.0	▲17.3
Producers' share (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	***	▲***	▲***
Malaysia	***	***	***	***	***	▲***	***	▲***	▼***
Spain	***	***	***	***	***	▼***	▼***	▼***	▲***
Subject sources	***	***	***	***	***	▼***	▼***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources	***	***	***	***	***	▲***	▼***	▲***	▲***
U.S. total market consumption value:									
Amount	1,125,549	1,097,958	1,462,400	684,802	875,032	▲29.9	▼(2.5)	▲33.2	▲27.8
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	***	***	***	***	***	***	***	***	***
Nonsubject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▼***	▲***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▲***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	***
All import sources:									
Quantity	1,073	1,054	1,840	895	1,207	▲71.5	▼(1.8)	▲74.6	▲34.9
Value	281,963	238,360	467,294	214,243	343,352	▲65.7	▼(15.5)	▲96.0	▲60.3
Unit value	$262,780	$226,148	$253,964	$239,378	$284,467	▼(3.4)	▼(13.9)	▲12.3	▲18.8
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	***

Table continued on next page.

Table C-1--Continued
Wind towers: Summary data concerning the U.S. total market, 2017-19, January to June 2019, and January to June 2020
(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			January to June		Comparison years			Jan-Jun
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. producers':									
Average capacity quantity	3,567	3,609	3,687	1,884	1,927	▲3.4	▲1.2	▲2.2	▲2.3
Production quantity	2,767	2,672	2,895	1,457	1,502	▲4.6	▼(3.4)	▲8.3	▲3.1
Capacity utilization (fn1)	77.6	74.0	78.5	77.3	77.9	▲0.9	▼(3.5)	▲4.5	▲0.6
U.S. shipments:									
Quantity	2,673	2,698	2,964	1,447	1,540	▲10.9	▲0.9	▲9.9	▲6.4
Value	843,586	859,598	995,106	470,559	531,680	▲18.0	▲1.9	▲15.8	▲13.0
Unit value	$315,595	$318,606	$335,731	$325,196	$345,247	▲6.4	▲1.0	▲5.4	▲6.2
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Inventories/total shipments (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Production workers	2,227	2,085	2,183	2,027	2,349	▼(2.0)	▼(6.4)	▲4.7	▲15.9
Hours worked (1,000s)	4,674	4,276	4,894	2,891	3,348	▲4.7	▼(8.5)	▲14.5	▲15.8
Wages paid ($1,000)	164,331	156,739	164,875	74,382	86,778	▲0.3	▼(4.6)	▲5.2	▲16.7
Hourly wages (dollars per hour)	$35.16	$36.66	$33.69	$25.73	$25.92	▼(4.2)	▲4.3	▼(8.1)	▲0.7
Productivity (units per 10,000 hours)	5.9	6.2	5.9	5.0	4.5	▼(0.1)	▲5.6	▼(5.3)	▼(11.0)
Unit labor costs	$59,390	$58,660	$56,952	$51,051	$57,775	▼(4.1)	▼(1.2)	▼(2.9)	▲13.2
Net sales:									
Quantity	2,666	2,698	2,964	1,447	1,540	▲11.2	▲1.2	▲9.9	▲6.4
Value	843,586	859,598	995,106	470,559	531,680	▲18.0	▲1.9	▲15.8	▲13.0
Unit value	$316,424	$318,606	$335,731	$325,196	$345,247	▲6.1	▲0.7	▲5.4	▲6.2
Cost of goods sold (COGS)	727,673	789,365	904,581	428,611	496,730	▲24.3	▲8.5	▲14.6	▲15.9
Gross profit or (loss) (fn2)	115,913	70,233	90,525	41,948	34,950	▼(21.9)	▼(39.4)	▲28.9	▼(16.7)
SG&A expenses	28,110	25,318	28,142	13,770	13,470	▲0.1	▼(9.9)	▲11.2	▼(2.2)
Operating income or (loss) (fn2)	87,803	44,915	62,383	28,178	21,480	▼(29.0)	▼(48.8)	▲38.9	▼(23.8)
Net income or (loss) (fn2)	85,025	50,860	57,087	25,431	22,075	▼(32.9)	▼(40.2)	▲12.2	▼(13.2)
Capital expenditures	41,751	26,707	17,323	9,925	7,316	▼(58.5)	▼(36.0)	▼(35.1)	▼(26.3)
Research and development expenses	***	***	***	***	***	▼***	▼***	▲***	▲***
Net assets	411,357	433,347	335,183	NA	NA	▼(18.5)	▲5.3	▼(22.7)	NA
Unit COGS	$272,946	$292,574	$305,189	$296,207	$322,552	▲11.8	▲7.2	▲4.3	▲8.9
Unit SG&A expenses	$10,544	$9,384	$9,495	$9,516	$8,747	▼(10.0)	▼(11.0)	▲1.2	▼(8.1)
Unit operating income or (loss) (fn2)	$32,934	$16,648	$21,047	$19,473	$13,948	▼(36.1)	▼(49.5)	▲26.4	▼(28.4)
Unit net income or (loss) (fn2)	$31,892	$18,851	$19,260	$17,575	$14,334	▼(39.6)	▼(40.9)	▲2.2	▼(18.4)
COGS/sales (fn1)	86.3	91.8	90.9	91.1	93.4	▲4.6	▲5.6	▼(0.9)	▲2.3
Operating income or (loss)/sales (fn1)	10.4	5.2	6.3	6.0	4.0	▼(4.1)	▼(5.2)	▲1.0	▼(1.9)
Net income or (loss)/sales (fn1)	10.1	5.9	5.7	5.4	4.2	▼(4.3)	▼(4.2)	▼(0.2)	▼(1.3)

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, 2017-19, January to June 2019, and January to June 2020
(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			January to June		Comparison years			Jan-Jun
	2017	2018	2019	2019	2020	2017-19	2017-18	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	***	***	***	***	***	***	***	***	***
Nonsubject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▼***	▲***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▲***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	***
All import 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, 2017-19, January to June 2019, and January to June 2020
(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			January to June		Comparison years			Jan-Jun
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
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.

APPENDIX D

U.S. PRODUCERS' AND U.S IMPORTERS' U.S. SHIPMENTS BY GEOGRAPHIC REGION

Table D-1
Wind towers: U.S. producers' U.S. shipments by geographic region, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. producers' U.S. shipments -- Northeast	***	***	***	***	***
Upper Midwest	288	438	620	203	352
Lower Midwest	964	909	992	470	587
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	824	776	844	505	370
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	2,708	2,608	3,054	1,462	1,639
	Share (percent)				
U.S. producers' U.S. shipments -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	100.0	100.0	100.0	100.0	100.0

Table continued on next page.

Table D-1—Continued
Wind towers: U.S. importers' U.S. shipments of imports from India by geographic region, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. importers' U.S. shipments: India -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	***	***	***	***	***
	Share (percent)				
U.S. importers' U.S. shipments: India -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	***	***	***	***	***

Table continued on next page.

Table D-1—Continued
Wind towers: U.S importers' U.S. shipments of imports from Malaysia by geographic region, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. importers' U.S. shipments: Malaysia -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	***	***	***	***	***
	Share (percent)				
U.S. importers' U.S. shipments: Malaysia -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	***	***	***	***	***

Table continued on next page.

Table D-1—Continued
Wind towers: U.S. importers' U.S. shipments of imports from Spain by geographic region, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. importers' U.S. shipments: Spain -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	***	***	***	***	***
	Share (percent)				
U.S. importers' U.S. shipments: Spain -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	***	***	***	***	***

Table continued on next page.

Table D-1—Continued
Wind towers: U.S. importers' U.S. shipments of imports from subject sources by geographic region, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. importers U.S. shipments: subject sources --					
Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	***	***	***	***	***
	Share (percent)				
U.S. importers U.S. shipments: subject sources --					
Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other[1]	***	***	***	***	***
All regions	***	***	***	***	***

Table continued on next page.

Table D-1—Continued
Wind towers: U.S. importers' U.S. shipments of imports from nonsubject sources by geographic region, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. importers' U.S. shipments: nonsubject sources -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	***	***	***	***	***
	Share (percent)				
U.S. importers' U.S. shipments: nonsubject sources -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	***	***	***	***	***

Table continued on next page.

Table D-1—Continued
Wind towers: U.S. importers' U.S. shipments of imports from all import sources by geographic region, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. importers' U.S. shipments: all import sources -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	1,073	1,054	1,840	895	1,207
	Share (percent)				
U.S. importers' U.S. shipments: all import sources -- Northeast	***	***	***	***	***
Upper Midwest	***	***	***	***	***
Lower Midwest	***	***	***	***	***
Upper Southeast	***	***	***	***	***
Lower Southeast	***	***	***	***	***
Central Southwest	***	***	***	***	***
Mountains	***	***	***	***	***
Pacific Coast	***	***	***	***	***
Other	***	***	***	***	***
All regions	100.0	100.0	100.0	100.0	100.0

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

Table D-2
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Northeast, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in the Northeast. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in the Northeast. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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Table D-2--Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Upper Midwest, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in the Upper Midwest. -- U.S. producers'	288	438	620	203	352
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in the Upper Midwest. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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Table D-2--Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Lower Midwest, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in the Lower Midwest. -- U.S. producers'	964	909	992	470	587
U.S. importers'.—					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in the Lower Midwest. -- U.S. producers''	***	***	***	***	***
U.S. importers'.—					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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Table D-2--Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Upper Southeast, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in the Upper Southeast. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in the Upper Southeast. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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Table D-2--Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Lower Southeast, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in the Lower Southeast. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in the Lower Southeast. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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Table D-2--Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Central Southwest, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in the Central Southwest. -- U.S. producers'	824	776	844	505	370
U.S. importers'.—					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in the Central Southwest. -- U.S. producers'	***	***	***	***	***
U.S. importers'.—					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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Table D-2--Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Mountains, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in the Mountains. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in the Mountains. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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Table D-2--Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in the Pacific Coast, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in the Pacific Coast. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in the Pacific Coast. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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Table D-2--Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in other regions, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in the other regions. -- U.S. producers'	***	***	***	***	***
U.S. importers'.—					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in the other regions. -- U.S. producers'	***	***	***	***	***
U.S. importers'.—					
India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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Table D-2--Continued
Wind towers: U.S. producers' and U.S. importers' U.S. shipments in all regions, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (units)				
U.S. shipments in all regions. -- U.S. producers'	2,708	2,608	3,054	1,462	1,639
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***
	Share (percent)				
U.S. shipments in all regions. -- U.S. producers'	***	***	***	***	***
U.S. importers'.— India	***	***	***	***	***
Malaysia	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Combined producers and importers	***	***	***	***	***

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