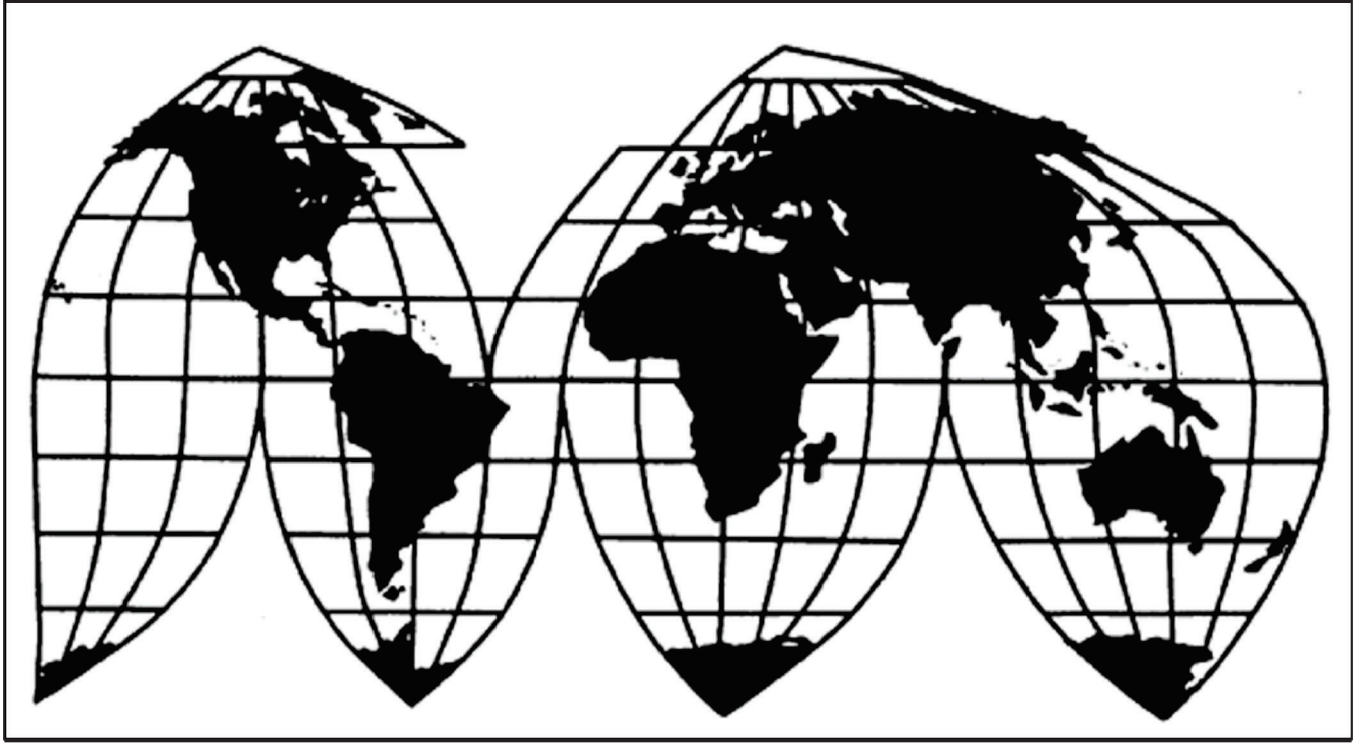
Utility Scale Wind Towers from China and Vietnam

Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Review)

Publication 4888 **April 2019**

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 701-TA-486 and 731-TA-1195-1196 (Review)

Utility Scale Wind Towers from China and Vietnam

DETERMINATIONS

On the basis of the record[1] developed in the subject five-year reviews, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), 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 to an industry in the United States within a reasonably foreseeable time.[2]

BACKGROUND

The Commission, pursuant to section 751(c) of the Act (19 U.S.C. 1675(c)), instituted these reviews on January 2, 2018 (83 FR 142) and determined on April 9, 2018 that it would conduct full reviews (83 F.R. 17446, April 19, 2018). Notice of the scheduling of the Commission's reviews and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on September 13, 2018 (83 FR 46516). Effective February 4, 2019, the Commission revised its schedule due to the lapse in appropriations and ensuing cessation of Commission operations (84 FR 2926, February 8, 2019). The Commission cancelled the hearing scheduled on February 28, 2019 following a request by the sole party to the proceeding (84 FR 7934, March 5, 2019). In lieu of a hearing, the domestic producers responded to written questions submitted by the Commission as part of their posthearing brief.

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

[2] Chairman David S. Johanson dissenting with respect to the antidumping duty order on utility scale wind towers from Vietnam. Commissioner Meredith M. Broadbent not participating.

Views of the Commission

Based on the record in these five-year reviews, we determine under section 751(c) of the Tariff Act of 1930, as amended ("the Tariff Act"), that revocation of the countervailing duty order on utility scale wind towers ("wind towers") from China and the antidumping duty orders on wind towers from China and Vietnam would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[1] [2]

I. Background

Following antidumping and countervailing duty petitions filed on December 29, 2011, by the Wind Tower Trade Coalition (the "Coalition" or "WTTC"), which consists domestic producers of wind towers, on behalf of its members,[3] the Commission determined in February 2013 that an industry in the United States was materially injured or threatened with material injury by reason of imports of wind towers from China and Vietnam that the U.S. Department of Commerce ("Commerce") had determined were sold at less than fair value and subsidized by the government of China.[4] Commerce issued antidumping and countervailing duty orders on February 15, 2013.[5] Following litigation, Commerce published a notice on March 29, 2017, that excluded wind towers produced and exported by CS Wind from the antidumping duty order regarding subject imports from Vietnam.[6]

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[1] Due to the lapse in appropriations and the ensuing cessation of Commission operations, the Commission's deadline in these reviews was tolled and it revised its schedule accordingly. *Utility Scale Wind Towers from China and Vietnam; Revised Schedule for Full Five-Year Reviews*, 84 Fed. Reg. 2926 (Feb. 8, 2019).

[2] Chairman Johanson determines that revocation of the antidumping duty order on wind towers from Vietnam will not lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. He joins sections I, II, III.A-III.C, and IV.A-IV.B of these views. *See* Separate and Dissenting Views of Chairman David S. Johanson. Commissioner Broadbent did not participate in the vote and these determinations.

[3] Confidential Report ("CR") at I-2; Public Report ("PR") at I-I.

[4] *Utility Scale Wind Towers from China and Vietnam*, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final), USITC Pub. 4372 (Feb. 2013) ("*Original Determinations*") at 1. Commissioners Williamson and Aranoff determined that an industry in the United States was materially injured by reason of subject imports. Commissioner Pinkert determined that an industry in the United States was threatened with material injury by reason of subject imports. Commissioners Pearson, Johanson, and Broadbent reached negative determinations. *Id.* at 1 nn. 2, 3.

[5] Utility Scale Wind Towers from the People's Republic of China: Antidumping Duty Order, 78 Fed. Reg. 11146 (Dep't of Comm. Feb. 15, 2013); Utility Scale Wind Towers from the Socialist Republic of Vietnam: Amended Final Determination of Sales at Less Than Fair Value and Antidumping Duty Order, 78 Fed. Reg. 11150 (Dep't of Comm. Feb. 15, 2013); Utility Scale Wind Towers from the People's Republic of China: Countervailing Duty Order, 78 Fed. Reg. 11152 (Dep't of Comm. Feb. 15, 2013).

[6] Utility Scale Wind Towers from the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended

(Continued…)

Siemens Energy, Inc. ("Siemens"), an importer of wind towers, challenged the Commission's affirmative determinations before the U.S. Court of International Trade ("CIT"). The CIT rejected Siemens's arguments and affirmed the Commission's determinations in all respects.[7] Siemens subsequently appealed the judgment of the CIT to the U.S. Court of Appeals for the Federal Circuit. The Court of Appeals again rejected Siemens's challenges to the Commission's determinations and affirmed the CIT.[8]

On January 2, 2018, the Commission instituted the present reviews pursuant to section 751(c) of the Tariff Act.[9] The Commission received a sole response to the notice of institution submitted on behalf of the Coalition.[10] The Commission did not receive a response from any producer, importer, or exporter of wind towers from China or Vietnam and therefore determined that the respondent interested party group response with respect to the reviews of wind towers from China and Vietnam were inadequate. However, the Commission further found that circumstances, including changes in the conditions of competition since the original investigations, warranted conducting full reviews. Accordingly, the Commission determined to conduct full reviews of the orders on wind towers from China and Vietnam.[11]

The Coalition filed a prehearing brief and responses to Commission questions. No respondent entity responded to the Commission's notice of institution or otherwise participated in these reviews. Because there were no requests from respondent parties to appear at the hearing, the hearing was canceled following a request from the Coalition.[12]

U.S. industry data are based on the questionnaire responses of seven U.S. producers of wind towers that are believed to account for all domestic production of wind towers in 2017.[13] U.S. import data and related information are based on official import statistics and the questionnaire responses of six U.S. importers of wind towers that accounted for all subject and nonsubject U.S. imports during 2012 through June 2018.[14] The Commission did not receive any responses to its questionnaires from any producer of wind towers in China or Vietnam.[15]

(…Continued)
Final Determination of Investigation, 82 Fed. Reg. 15493 (Dep't of Commerce Mar. 29, 2017). This determination is currently on appeal. CR at IV-15 n.30; PR at IV-11-12 n.30.

[7] *Siemens Energy, Inc. v. United States*, 992 F. Supp. 2d 315 (Ct. Int'l Trade 2014).

[8] Siemens Energy, Inc. v. United States, 806 F.3d 1367 (Fed. Cir. 2015).

[9] Utility Scale Wind Towers from China and Vietnam; Institution of Five-Year Reviews, 83 Fed. Reg. 142 (Jan. 2, 2018).

[10] In these reviews, the Coalition consists of the following domestic producers of wind towers: Broadwind Towers, Inc., GRI Towers Texas Inc., Trinity Structural Towers, Inc., and Ventowers Industries LLC. WWTC Response to the Notice of Institution at Exhibit 1.

[11] Utility Scale Wind Towers from China and Vietnam; Notice of Commission Determination to Conduct Full Five-Year Reviews, 83 Fed. Reg. 17446 (Apr. 19, 2018); see also Explanation of Commission Determination on Adequacy, EDIS Doc. 643051.

[12] Utility Scale Wind Towers from China and Vietnam; Cancellation of Hearing for Full-Five Year Reviews, 84 Fed. Reg. 7934 (Mar. 5, 2019).

[13] CR at I-35; PR at I-8.

[14] CR/PR at IV-1.

[15] CR at IV-6, IV-14; PR at IV-5, IV-11.

Therefore, foreign industry data and related information are based on information from the original investigations, information submitted by the Coalition, and information gathered by staff, such as Global Trade Atlas ("GTA") data and other publicly available information.[16]

II. Domestic Like Product and Industry

A. Domestic Like Product

In making its determination under section 751(c) of the Tariff Act, the Commission defines the "domestic like product" and the "industry."[17] The Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation under this subtitle."[18] The Commission's practice in five-year reviews is to examine the domestic like product definition from the original investigation and consider whether the record indicates any reason to revisit the prior findings.[19]

Commerce has defined the imported merchandise within the scope of the orders under review as follows:

> The merchandise covered by these orders is certain wind towers, whether or not tapered, and sections thereof. Certain wind towers are 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 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

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[16] *See generally* CR at IV-6 – IV-18; PR at IV-5-IV-14.

[17] 19 U.S.C. § 1677(4)(A).

[18] 19 U.S.C. § 1677(10); *see*, *e.g., Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996); *Torrington Co. v. United States*, 747 F. Supp. 744, 748-49 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991); *see also* S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

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

> 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. Merchandise covered by the orders is currently classified in the Harmonized Tariff System of the United States (HTSUS) under subheadings 7308.20.0020 or 8502.31.0000. Prior to 2011, merchandise covered by this review was classified in the HTSUS under subheading 7308.20.0000 and may continue to be to some degree. While HTSUS subheadings are provide for convenience and customs purposes, the written description of the subject merchandise is dispositive.[20]

Wind towers are large tubular steel towers that are part of wind turbines. Wind turbines convert the mechanical energy of wind to electrical energy and are comprised of three main components – the nacelle, rotor, and tower.[21] 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.[22] 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

[20] Utility Scale Wind Towers from the People's Republic of China and the Socialist Republic of Vietnam: Final Results of Expedited First Sunset Reviews of Antidumping Duty Orders, 83 Fed. Reg. 19220 (Dep't of Comm. May 2, 2018) (internal footnotes omitted); see also Utility Scale Wind Towers from the People's Republic of China: Final Results of Expedited First Sunset Reviews of Countervailing Duty Order, 83 Fed. Reg. 22960 (Dep't of Comm. May 17, 2018).

[21] CR at I-22; PR at I-18.

[22] CR at I-22; PR at I-18.

generation capacity in excess of 100 kilowatts.[23] These towers are known in the industry as "utility scale" wind towers.[24]

Original Investigations. In the original investigations, the Commission defined a single domestic like product as wind towers, coextensive with Commerce's scope. In doing so, the Commission rejected the respondent argument that wind towers produced for a particular original equipment manufacturer ("OEM") should be defined as a separate domestic like product. The Commission found that differences between wind towers produced for different OEMs (such as size, steel standards, welding standards, and components) were minor and did not constitute clear dividing lines.[25]

The Current Reviews. The Coalition argues that the Commission should continue to define a single domestic like product, coextensive with the scope definition.[26]

The record in these reviews indicates no material change in the pertinent product characteristics since the original investigations.[27] Additionally, no party argues that the Commission should adopt a different domestic like product definition. Consequently, for the reasons articulated in the original determinations, we define the domestic like product as wind towers, coextensive with the scope.

B. Domestic Industry and Related Parties

Section 771(4)(A) of the Tariff Act defines the relevant industry as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[28] 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.[29] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[30]

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[23] CR at I-15; PR at I-13.

[24] CR at I-25; PR at I-20-21.

[25] *Original Determinations*, USITC Pub. 4372 at 5-6.

[26] Coalition Prehearing Br. at 2, 6; Coalition Posthearing Br. at 2.

[27] *See generally* CR at I-23 – I-29; PR at I-19 – I-23.

[28] 19 U.S.C. § 1677(4)(A). The definitions in 19 U.S.C. § 1677 are applicable to the entire subtitle containing the antidumping and countervailing duty laws, including 19 U.S.C. §§ 1675 and 1675a. *See* 19 U.S.C. § 1677.

[29] *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 (Continued…)

In the original investigations, the Commission did not exclude any related parties. Accordingly, the Commission defined the domestic industry to include all U.S. producers of wind towers.[31]

In these reviews, domestic producer *** is a related party because it is related to an importer of subject merchandise.[32] Although it does not address *** status as a related party, the Coalition argues that the Commission should again define the domestic industry to include all U.S. producers of wind towers.[33] *** is the *** U.S. producer of wind towers, accounting for *** percent of reported U.S. production of wind towers in 2017.[34] During the period of review, *** imported *** units of subject merchandise in ***, representing *** percent of *** domestic production.[35] Its affiliate reported that its reasons for importing was ***.[36] *** regarding continuation of the orders in these reviews.[37]

We find that appropriate circumstances do not exist to exclude *** from the domestic industry as a related party. *** imported subject merchandise only in the *** of the period of review.[38] *** domestic production of wind towers increased overall, *** from 2012 to 2017,

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(…Continued)
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).

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

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

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

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

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

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

[31] One domestic producer was subject to exclusion under the related parties provision because it imported subject merchandise during the period of investigation. The Commission concluded that appropriate circumstances did not exist to exclude the producer from the domestic industry, finding that its principal interest was in domestic production. *Original Determinations*, USITC Pub. 4372 at 6-8.

[32] CR at I-36, III-8, and table III-6; PR at I-28, III-7, and Table III-6. *** reported that it is related to ***, an importer of subject merchandise, which *** describes as a sibling company. CR/PR at Table I-7. Although the relationship of the two companies as sibling companies does not itself necessarily evidence the necessary degree of control, we assume *arguendo* that *** is a related party.

[33] Coalition Prehearing Br. at 6-7; Coalition Posthearing Br. at 2.

[34] CR/PR at Table I-6.

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

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

[37] CR/PR at Table I-6.

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

and its domestic production was higher in January-June ("interim") 2018 than in interim 2017.[39] Moreover, in September 2016, ***.[40] This indicates that *** principal interest lies in domestic production.

Accordingly, given our domestic like product definition, we define the domestic industry as all domestic producers of wind towers.

III. Cumulation

A. Legal Standard

With respect to five-year reviews, section 752(a) of the Tariff Act provides as follows:

> the Commission may cumulatively assess the volume and effect of imports of the subject merchandise from all countries with respect to which reviews under section 1675(b) or (c) of this title were initiated on the same day, if such imports would be likely to compete with each other and with domestic like products in the United States market. The Commission shall not cumulatively assess the volume and effects of imports of the subject merchandise in a case in which it determines that such imports are likely to have no discernible adverse impact on the domestic industry.[41]

Cumulation therefore is discretionary in five-year reviews, unlike original investigations, which are governed by section 771(7)(G)(i) of the Tariff Act.[42] The Commission may exercise its discretion to cumulate, however, only if the reviews are initiated on the same day, the Commission determines that the subject imports are likely to compete with each other and the domestic like product in the U.S. market, and imports from each such subject country are not likely to have no discernible adverse impact on the domestic industry in the event of revocation. Our focus in five-year reviews is not only on present conditions of competition, but also on likely conditions of competition in the reasonably foreseeable future.

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[39] *** produced *** units of wind towers in 2012, *** units in 2013, *** units in 2014, *** units in 2015, *** units in 2016, and *** units in 2017; it produced *** units in interim 2017 and *** units in interim 2018. CR/PR at Table III-8. *** operating income to net sales was *** percent and its net income margin was *** in 2017. CR/PR at Table III-12.

[40] CR/PR at Tables III-1 & III-2.

[41] 19 U.S.C. § 1675a(a)(7).

[42] 19 U.S.C. § 1677(7)(G)(i); *see also*, *e.g.*, *Nucor Corp. v. United States*, 601 F.3d 1291, 1293 (Fed. Cir. 2010) (Commission may reasonably consider likely differing conditions of competition in deciding whether to cumulate subject imports in five-year reviews); *Allegheny Ludlum Corp. v. United States*, 475 F. Supp. 2d 1370, 1378 (Ct. Int'l Trade 2006) (recognizing the wide latitude the Commission has in selecting the types of factors it considers relevant in deciding whether to exercise discretion to cumulate subject imports in five-year reviews); *Nucor Corp. v. United States*, 569 F. Supp. 2d 1328, 1337-38 (Ct. Int'l Trade 2008).

In the original investigations, all Commissioners cumulated imports from China and Vietnam for purposes of their material injury analysis.[43] The Coalition argues that the Commission should exercise its discretion to cumulate subject imports from China and Vietnam for purposes of these reviews.[44]

B. Likelihood of No Discernible Adverse Impact

The statute precludes cumulation if the Commission finds that subject imports from a country are likely to have no discernible adverse impact on the domestic industry.[45] Neither the statute nor the Uruguay Round Agreements Act ("URAA") Statement of Administrative Action ("SAA") provides specific guidance on what factors the Commission is to consider in determining that imports "are likely to have no discernible adverse impact" on the domestic industry.[46] With respect to this provision, the Commission generally considers the likely volume of subject imports and the likely impact of those imports on the domestic industry within a reasonably foreseeable time if the orders are revoked. Our analysis for each of the subject countries takes into account, among other things, the nature of the product and the behavior of subject imports in the original investigations.

China. In the original investigations, U.S. shipments of subject imports from China were *** units in 2009, *** units in 2010, and *** units in 2011; they were *** units in interim 2011 and *** units in January through June ("interim") 2012.[47] The share of the U.S. market held by subject imports from China increased overall during the period of investigation. It was *** percent in 2009, *** percent in 2010, *** percent in 2011, *** percent in interim 2011 and *** percent in interim 2012.[48] The Commission received questionnaire responses from five producers of wind towers in China, which estimated that they accounted for *** percent of total exports of wind towers from China to the United States in 2011.[49] Responding subject producers in China reported production capacity of 2,475 units in 2009, 2,732 units in 2010, 3,455 units in 2011, 1,637 units in interim 2011, and 1,777 units in interim 2012.[50] Based on publicly available data, total production capacity in China exceeded 16,000 wind towers in January 2012.[51] Responding foreign producers in China reported production of 1,888 units in 2009, 1,808 units in 2010, and 2,563 units in 2011, 1,169 units in interim 2011, and 1,478 units

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[43] *Original Determinations*, USITC Pub. 4372 at 8-11. The four Commissioners who reached the issue also cumulated subject imports from China and Vietnam for threat analysis. *See id.* at 31-32 (views of Commissioner Pinkert), 47 (dissenting views).

[44] Coalition Prehearing Br. at 7-23; Coalition Posthearing Br. at 3.

[45] 19 U.S.C. § 1675a(a)(7).

[46] SAA, H.R. Rep. No. 103-316, vol. I at 887 (1994).

[47] *Original Determinations*, USITC Pub. 4372, Confidential Report (INV-LL-002) at Table C-1 (EDIS Doc. 654711).

[48] *Original Determinations*, USITC Pub. 4372, Confidential Report at Table C-1.

[49] *Original Determinations*, USITC Pub. 4372, Confidential Views at 4 (EDIS Doc. 654717).

[50] *Original Determinations*, USITC Pub. 4372 at Table VII-2.

[51] *Original Determinations*, USITC Pub. 4372 at Table VII-1.

in interim 2012.[52] Exports to the United States accounted for the *** share of the responding producers' total shipments throughout the period of investigation. They accounted for *** percent in 2009, *** percent in 2010, *** percent in 2011, *** percent in interim 2011, and *** percent in interim 2012.[53]

In these reviews, no producer in China responded to the Commission's questionnaire. Available information indicates that production capacity for wind towers in China, for firms whose production or production capacity could be identified, ranged between 16,220 and 16,770 units annually in the first quarter of 2019.[54] GTA data, which may include out-of-scope products, indicate that the United States was by far the largest single country export market for wind towers from China in 2012, although exports of wind towers from China to the United States declined substantially after that.[55]

Accordingly, in light of the existing wind tower capacity in China, the export orientation of subject producers, and the behavior of subject producers in the original investigations, we do not find that imports of wind towers from China would likely have no discernible adverse impact on the domestic industry if the antidumping and countervailing duty orders were revoked.

Vietnam. In the original investigations, the Commission received questionnaire responses from two producers of wind towers in Vietnam, CS Wind (Vietnam) and UBI Tower Sole Member Company Ltd. ("UBI"), which together reportedly accounted for the majority of wind tower production in Vietnam. *** exports of wind towers from Vietnam to the United States in 2011 were attributed to CS Wind (Vietnam).[56] UBI started producing in 2010 and had *** towers, *** of which were exported to the United States, during the period of investigation. UBI projected, however, ***.[57] U.S. shipments of subject imports from Vietnam (which, as previously indicated, were ***) were *** units in 2009, *** units in 2010, *** units in 2011, *** units in interim 2011, and *** units in interim 2012.[58] The share of the U.S. market held by subject imports from Vietnam was *** percent in 2009 and 2010 and *** percent in 2011; it was *** percent in interim 2011 and *** percent in interim 2012.[59]

In these reviews, no wind tower producer in Vietnam responded to the Commission's questionnaire. Available information indicates that production capacity of wind tower producers in Vietnam that remain subject to the order is the same as what was publicly reported in the original investigations: Vina Halla Heavy Industries Ltd. ("Vina Halla") has an

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[52] *Original Determinations*, USITC Pub. 4372 at Table VII-2.

[53] *Original Determinations*, USITC Pub. 4372, Confidential Report at Table VII-2. Because of the made-to-order nature of wind towers, the Commission did not collect product pricing data in the original final phase investigations. *Original Determinations*, USITC Pub. 4372 at 22.

[54] *Calculated from* CR/PR at Figure IV-3.

[55] CR/PR at Table IV-3. In 2017, the largest single country export markets for wind towers from China were Pakistan and Germany. *Id.*

[56] *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-11.

[57] *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-14.

[58] *Original Determinations*, USITC Pub. 4372, Confidential Report at Table C-1.

[59] *Original Determinations*, USITC Pub. 4372, Confidential Report at Table C-1.

annual capacity of 400 towers, and UBI of 300 towers.[60] GTA data indicate that the United States was the largest export market for wind towers from Vietnam in 2012, accounting for 30.5 percent of the total share of exports; they accounted for 1.5 percent in 2014 and 14.0 percent in 2016.[61]

Accordingly, because there continue to be subject producers of wind towers in Vietnam with available capacity, one of which indicated prior to the imposition of the order its inclination to enter the U.S. market, we do not find that imports of wind towers from Vietnam would likely have no discernible adverse impact on the domestic industry if the antidumping duty order was revoked.

C. Likelihood of a Reasonable Overlap of Competition

The Commission generally has considered four factors intended to provide a framework for determining whether subject imports compete with each other and with the domestic like product.[62] Only a "reasonable overlap" of competition is required.[63] In five-year reviews, the

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[60] CR at IV-15; PR at IV-12.

[61] CR/PR at Table IV-4. In 2017, the largest export market for wind towers from Vietnam was Australia. *Id.* Responding foreign producers, including CS Wind (Vietnam), in Vietnam reported production capacity of *** units in 2009, *** units in 2010, and *** units in 2011; they reported production capacity of *** units in interim 2011 and interim 2012. Responding foreign producers in Vietnam reported production of *** units in 2009, *** units in 2010, *** units in 2011, *** units in interim 2011, and *** in interim 2012. Exports to the United States accounted for the *** share of the responding producers' total shipments ***. They accounted for *** percent in 2009, *** percent in 2010, *** percent in 2011, *** percent in interim 2011, and *** percent in interim 2012. *Original Determinations*, USITC Pub. 4372 at Table VII-4. According to questionnaire data and proprietary Customs data, ***. See responses to Commission's importer questionnaire; and proprietary Customs data, EDIS doc. 663194.

[62] The four factors generally considered by the Commission in assessing whether imports compete with each other and with the domestic like product are as follows: (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 geographical markets of 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 subject imports are simultaneously present in the market with one another and the domestic like product. *See, e.g., Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[63] *See Mukand Ltd. v. United States*, 937 F. Supp. 910, 916 (Ct. Int'l Trade 1996); *Wieland Werke,* 718 F. Supp. at 52 ("Completely overlapping markets are not required."); *United States Steel Group v. United States,* 873 F. Supp. 673, 685 (Ct. Int'l Trade 1994), *aff'd*, 96 F.3d 1352 (Fed. Cir. 1996). We note, however, that there have been investigations where the Commission has found an insufficient overlap in competition and has declined to cumulate subject imports. *See, e.g*., *Live Cattle from Canada and Mexico*, Inv. Nos. 701-TA-386 and 731-TA-812-13 (Preliminary), USITC Pub. 3155 at 15 (Feb. 1999), *aff'd sub nom, Ranchers-Cattlemen Action Legal Foundation v. United States*, 74 F. Supp. 2d 1353 (Ct. Int'l (Continued…)

relevant inquiry is whether there likely would be competition even if none currently exists because the subject imports are absent from the U.S. market.[64]

Fungibility. In the original investigations, the Commission found a reasonable degree of fungibility among subject imports from each country and the domestic like product, observing that market participants reported domestically produced wind towers and subject imports to have some degree of interchangeability.[65] In these reviews, the majority of U.S. producers, importers, and purchasers reported that the domestic like product, subject imports from China, and subject imports from Vietnam are interchangeable in all comparisons.[66] In addition, most purchasers reported that domestically produced wind towers are comparable with subject imports from China in 14 out of 18 factors and that they are comparable with subject imports from Vietnam in 15 out of 18 factors.[67] In particular, the three factors identified by purchasers to be among their top three purchasing factors were quality, price/landed cost, and availability/capacity.[68] All purchasers reported that the U.S.-produced wind towers were comparable with subject imports from China and Vietnam in terms of quality that meets or exceeds industry standards. Similarly, most purchasers reported that U.S.-produced wind towers were comparable with subject imports from China and Vietnam in terms of available capacity.[69]

Channels of Distribution. In the original investigations, the Commission found that the majority of shipments of both domestically produced merchandise and subject imports were through the same channels of distribution, namely to unrelated original equipment manufacturers of wind turbines (OEMs).[70] In these reviews, U.S. producers and importers reported shipping wind towers almost exclusively to end users.[71]

(…Continued)
Trade 1999); *Static Random Access Memory Semiconductors from the Republic of Korea and Taiwan*, Inv. Nos. 731-TA-761-62 (Final), USITC Pub. 3098 at 13-15 (Apr. 1998).

[64] *See generally*, *Chefline Corp. v. United States*, 219 F. Supp. 2d 1313, 1314 (Ct. Int'l Trade 2002).

[65] *Original Determinations*, USITC Pub. 4372 at 9-10; *see also id.* at 31-32.

[66] CR/PR at Table II-15.

[67] CR/PR at Table II-14. With respect to comparisons to wind towers from China, more purchasers reported that U.S. produced wind towers were superior in terms of transportation costs and inferior in terms of price; an equal number of purchasers reported U.S. produced wind towers to be comparable or inferior in terms of discounts offered and product range. *Id.* With respect to comparisons to wind towers from Vietnam, more purchasers reported that U.S. produced wind towers were superior in terms of transportation costs and inferior in terms of price; an equal number of purchasers reported U.S. produced wind towers to be comparable or inferior in terms of discounts offered. *Id.*

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

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

[70] *Original Determinations*, USITC Pub. 4372 at 10; *see also id.* at 31-32.

[71] CR/PR at Table II-1. Observations concerning subject sources were available for 2012 (China). Observations concerning the domestic product and imports from nonsubject countries were available for each year and interim period.

Geographic Overlap. In the original investigations, the Commission found that the domestic like product and subject imports from each subject source were marketed and shipped nationwide.[72] In these reviews, U.S. producers reported selling to all regions in the United States, and they reported that in 2017, *** percent of their shipments were to the Midwest region, *** percent were to the Central Southwest region, and *** percent were to the Mountain region.[73] Importers of subject wind towers from China reported shipments to the ***, and the majority of subject imports entered the United States through Texas, Louisiana, and Oregon.[74]

Simultaneous Presence in Market. In the original investigations, the Commission found that bid data indicated that domestically produced wind towers were present in the U.S. market during each year of the period of investigation and that importers' questionnaires showed shipments of subject imports from China and Vietnam were also present throughout this period.[75] In these reviews, according to official import statistics, subject imports from China were present in each month during the January 2012 – June 2018 period of review except in December 2012, February and September 2014, and several months in 2016.[76] Subject imports from Vietnam were not present during the period of review.[77]

Conclusion. We find a likely reasonable overlap of competition among subject imports from China and Vietnam and between the domestic like product and subject imports from each source. As indicated above, the majority of market participants reported that wind towers produced from all sources are interchangeable, and most purchasers reported that domestically produced wind towers are comparable with subject imports from China and Vietnam with respect to the majority of purchasing factors. In addition, the record in these reviews indicates that the domestic like product and subject imports from China were sold through the same channels of distribution, served overlapping geographic areas, and were simultaneously present in the U.S. market. There is limited information on the record in these reviews concerning subject imports from Vietnam because CS Wind (Vietnam), ***, is excluded from the antidumping duty order. However, nothing in the record indicates that upon revocation subject imports from Vietnam would not resume the distribution and geographic

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[72] *Original Determinations*, USITC Pub. 4372 at 10; *see also id.* at 31-32. Specifically, responding U.S. producers reported that approximately *** of their sales were destined for the Midwest and almost *** were destined for the Pacific Coast. Importers reported shipping subject imports from China to all U.S. geographic regions in 2011, and subject imports from Vietnam to all regions in the contiguous United States except the Southeast. Subject producers bid on projects across most regions of the United States, and U.S. imports of wind towers from China and Vietnam entered multiple U.S. ports of entry, although they were concentrated in the West and Gulf coasts. *Original Determinations*, USITC Pub. 4372, Confidential Views at 15.

[73] CR at II-4; PR at II-3; CR/PR at Table II-2.

[74] CR at II-4, IV-4; PR at II-3, IV-4; CR/PR at Table II-2. Importers of nonsubject wind towers from Vietnam reported shipments to the *** regions. CR/PR at Table II-2.

[75] *Original Determinations*, USITC Pub. 4372 at 10; *see also id.* at 31-32.

[76] CR at IV-5; PR at IV-4.

[77] CR at IV-5; PR at IV-4.

patterns displayed in the original investigations. In light of this, along with the fungibility of wind towers from domestic and subject sources and the fact that almost all wind towers are sold through the same channels of distribution in the U.S. market, it is likely that there would be a reasonable overlap of competition between subject imports from China and Vietnam and between subject imports from Vietnam and domestically produced wind towers. Accordingly, and in the absence of any contrary argument, we find a likely reasonable overlap of competition among subject imports from China and Vietnam and between the domestic like product and subject imports from each source.

D. Likely Conditions of Competition

In determining whether to exercise our discretion to cumulate subject imports, we assess whether subject imports from the subject countries would compete under similar or different conditions in the U.S. market if the orders under review were revoked. We find that the record in these reviews does not indicate that there would likely be any significant difference in the conditions of competition between subject imports from China and Vietnam upon revocation, and no party has argued to the contrary. The record shows that both countries have significant production capacity and are export oriented.[78] In addition, both countries have a demonstrated interest in the U.S. market[79] and neither country faces any deterrent such as a corporate affiliation or control relationship with a domestic producer that would affect their behavior in the U.S. market.

E. Conclusion

We do not find that subject imports from China and Vietnam would likely have no discernible adverse impact upon revocation, and we find that there would be a reasonable overlap of competition between subject imports from both countries and between subject imports from each country and the domestic like product. We also find that the record in these reviews does not indicate that there would likely be any significant difference in the conditions of competition between subject imports upon revocation. Accordingly, we exercise our discretion to cumulate subject imports from China and Vietnam for purposes of these reviews.

[78] See CR/PR at Figure IV-3, Table IV-3, page IV-15, n. 32 and Table IV-4.

[79] See discussion in Section III.B. at pages 14 -17.

IV. Revocation of the Antidumping and Countervailing Duty Orders Would Likely Lead to Continuation or Recurrence of Material Injury Within a Reasonably Foreseeable Time

A. Legal Standards

In a five-year review conducted under section 751(c) of the Tariff Act, Commerce will revoke an antidumping or countervailing duty order unless: (1) it makes a determination that dumping or subsidization is likely to continue or recur and (2) the Commission makes a determination that revocation of the antidumping or countervailing duty order "would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time."[80] The SAA states that "under the likelihood standard, the Commission will engage in a counterfactual analysis; it must decide the likely impact in the reasonably foreseeable future of an important change in the status quo – the revocation or termination of a proceeding and the elimination of its restraining effects on volumes and prices of imports."[81] Thus, the likelihood standard is prospective in nature.[82] The U.S. Court of International Trade has found that "likely," as used in the five-year review provisions of the Act, means "probable," and the Commission applies that standard in five-year reviews.[83]

The statute states that "the Commission shall consider that the effects of revocation or termination may not be imminent, but may manifest themselves only over a longer period of time."[84] According to the SAA, a "'reasonably foreseeable time' will vary from case-to-case, but

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[80] 19 U.S.C. § 1675a(a).

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

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

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

[84] 19 U.S.C. § 1675a(a)(5).

normally will exceed the 'imminent' timeframe applicable in a threat of injury analysis in original investigations."[85]

Although the standard in a five-year review is not the same as the standard applied in an original investigation, it contains some of the same fundamental elements. The statute provides that the Commission is to "consider the likely volume, price effect, and impact of imports of the subject merchandise on the industry if the orders are revoked or the suspended investigation is terminated."[86] It directs the Commission to take into account its prior injury determination, whether any improvement in the state of the industry is related to the order or the suspension agreement under review, whether the industry is vulnerable to material injury if an order is revoked or a suspension agreement is terminated, and any findings by Commerce regarding duty absorption pursuant to 19 U.S.C. § 1675(a)(4).[87] The statute further provides that the presence or absence of any factor that the Commission is required to consider shall not necessarily give decisive guidance with respect to the Commission's determination.[88]

In evaluating the likely volume of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether the likely volume of imports would be significant either in absolute terms or relative to production or consumption in the United States.[89] In doing so, the Commission must consider "all relevant economic factors," including four enumerated factors: (1) any likely increase in production capacity or existing unused production capacity in the exporting country; (2) existing inventories of the subject merchandise, or likely increases in inventories; (3) the existence of barriers to the importation of the subject merchandise into countries other than the United States; and (4) the potential for product shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products.[90]

In evaluating the likely price effects of subject imports if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether there is likely to be significant underselling by the subject imports as compared to the domestic like product and whether the subject imports are likely to enter the

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

[86] 19 U.S.C. § 1675a(a)(1).

[87] 19 U.S.C. § 1675a(a)(1). Commerce has not made any duty absorption findings. CR at I-11 n.14; PR at I-9 n.14.

[88] 19 U.S.C. § 1675a(a)(5). Although the Commission must consider all factors, no one factor is necessarily dispositive. SAA at 886.

[89] 19 U.S.C. § 1675a(a)(2).

[90] 19 U.S.C. § 1675a(a)(2)(A-D).

United States at prices that otherwise would have a significant depressing or suppressing effect on the price of the domestic like product.[91]

In evaluating the likely impact of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider all relevant economic factors that are likely to have a bearing on the state of the industry in the United States, including but not limited to the following: (1) likely declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity; (2) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment; and (3) likely negative effects on the existing development and production efforts of the industry, including efforts to develop a derivative or more advanced version of the domestic like product.[92] All relevant economic factors are to be considered within the context of the business cycle and the conditions of competition that are distinctive to the industry. As instructed by the statute, we have considered the extent to which any improvement in the state of the domestic industry is related to the orders under review and whether the industry is vulnerable to material injury upon revocation.[93]

B. Conditions of Competition and the Business Cycle

In evaluating the likely impact of the subject imports on the domestic industry if an order is revoked, the statute directs the Commission to consider all relevant economic factors "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[94] The following conditions of competition inform our determinations.

1. Demand Conditions

a) Original Investigations

In its original determinations, the Commission found several conditions of competition to be relevant to its analysis. It observed that wind towers provide the support for wind turbines used in electrical power generation projects, and therefore, demand for wind towers is derived from demand for wind turbines and the installation of wind turbines in large wind

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

[92] 19 U.S.C. § 1675a(a)(4).

[93] The SAA states that in assessing whether the domestic industry is vulnerable to injury if the order is revoked, the Commission "considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they may also demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports." SAA at 885.

[94] 19 U.S.C. § 1675a(a)(4).

projects. The Commission further found that a limited number of OEMs were generally the purchasers of wind towers and that, after a project developer or purchaser awarded a project or wind farm to an OEM, the OEM would secure a supply of wind towers for the project.[95]

The Commission found that government incentives historically had a powerful influence on demand for wind towers. It observed that the scheduled expiration at the end of 2012 of a major government incentive, the production tax credit ("PTC"), and other government incentives such as the American Recovery and Reinvestment Act of 2009 ("ARRA"), resulted in extraordinary demand for wind towers toward the end of the period of investigation, particularly the first six months of 2012. When the PTC lapsed, installations of wind turbines slowed dramatically. The Commission also found that, in addition to the Federal tax credits, a number of states had implemented renewable portfolio standards ("RPS") mandates that also contributed to the growth of wind installations and the demand for wind towers. The Commission observed that wind projects were generally concentrated in areas of higher wind speeds, predominantly in the Midwest corridor between the Mississippi River and the Rockies, in California, and in the Pacific Northwest.[96]

In addition to the government incentives, the Commission found that other factors influenced demand for wind towers during the period of investigation, including the financial crisis that began in 2008. The Commission also observed that low prices for natural gas, an alternative source of energy for the generation of electricity, may also have dampened demand for wind projects to some extent, although it found that, with the push to benefit from the expiring tax credits, wind turbine installations increased during the latter portion of the period even though natural gas prices remained low.[97]

Apparent U.S. consumption of wind towers declined and then increased sharply during the original period of investigation. It decreased from 3,842 towers in 2009 to 2,887 towers in 2010, before increasing to *** towers in 2011. Apparent U.S. consumption was *** towers in interim 2011 and higher, at *** towers, in interim 2012.[98]

b) The Current Reviews

In these reviews, demand for wind towers continues to be derived from demand for wind turbines.[99] In addition, OEMs remain the primary purchasers of wind towers, and wind towers are produced to their specifications.[100] As was the case in the original investigations, government incentive programs assert a strong influence on demand for wind towers. In particular, the PTC continues to be a major driver of demand for wind towers, and various state

[95] *Original Determinations*, USITC Pub. 4372 at 15.
[96] *Original Determinations*, USITC Pub. 4372 at 15-16.
[97] *Original Determinations*, USITC Pub. 4372 at 16.
[98] *Original Determinations*, USITC Pub. 4372 at 16.
[99] CR at II-1, II-9; PR at II-1, II-6.
[100] CR/PR at II-1.

incentives remain, including RPS mandates.[101] Market participants confirmed the significant effect that government incentive programs, particularly the PTC, had on demand for wind towers in the U.S. market, reporting that demand grows when those programs are active and falls sharply when they are inactive.[102] Utility scale wind turbine installations in the United States declined from 13.1 GW in 2012 to 1.1 GW in 2013 before increasing to 4.8 GW in 2014, 8.0 GW in 2015, and 8.2 GW in 2016; they declined in 2017 in 7.0 GW and increased slightly in 2018 to 7.6 GW.[103] The particularly high level of installations in 2012 followed by the substantially lower level of installations in 2013 reflects the push by developers to complete projects in 2012, prior to the expected expiration of the PTC.[104] The PTC has been renewed three times since the end of 2012.[105] It has been extended through the end of 2019, but the value of the tax credit is to be phased down each year.[106]

During the period of review, apparent U.S. consumption was 3,935 units in 2012, *** units in 2103, 3,328 units in 2014, 4,003 units in 2015, 4,404 units in 2016, and 3,828 units in 2017; it was 2,107 units in interim 2017 and *** units in interim 2018.[107] The Coalition and several market participants reported that they expect U.S. demand for wind towers will increase in 2019 and 2020 and subsequently decrease as the PTC phaseout takes effect.[108]

2. Supply Conditions

a) The Original Investigations

During the original investigations, the domestic industry was the largest source of wind towers in the U.S. market until interim 2012, when subject imports captured the largest share of the market. Nonsubject imports lost market share to subject imports throughout the period of investigation.[109]

The Commission observed that two domestic producers reported having supply agreements with OEMs during the period of investigation and that these agreements were subject to renegotiation by the parties, allowing the OEMs to reduce the number of towers

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[101] CR at II-11 – II-13; PR at II-8 – II-9. Another federal incentive program is the investment tax credit, although the U.S. Department of Energy reports that firms typically opt for the PTC rather than the investment tax credit. *Id.*

[102] CR at II-14 – II-15; PR at II-10.

[103] CR/PR at Figure II-3.

[104] CR at II-9 – II-10; PR at II-6; CR/PR at Figure II-3.

[105] CR at II-11 – II-12; PR at II-8.

[106] CR at II-11 – II-12; PR at II-8.

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

[108] CR at II-14 – II-19; PR at II-10 –14; Coalition Prehearing Br. at 38-41; Coalition Posthearing Br. at 4& Responses to Commission Questions at 52-53.

[109] *Original Determinations*, USITC Pub. 4372 at 16-17.

ordered in a given year below the contract commitment, extend the timing of deliveries, or change the types of towers ordered.[110]

b) The Current Reviews

During the period of review, the U.S. wind towers market was supplied by the domestic industry, subject imports from China in 2012 and 2014, nonsubject imports from Vietnam in 2012 and 2016, and other nonsubject sources. After imposition of the orders, however, the domestic industry was able to recapture market share to become the largest source of wind towers to the U.S. market. The domestic industry's share of the U.S. market was 37.4 percent in 2012, *** percent in 2013, 69.5 percent in 2014, 66.7 percent in 2015, 70.3 percent in 2016, and 69.4 percent in 2017; it was 69.0 percent in interim 2017 and *** percent in interim 2018.[111] There have been a number of changes in the composition of the domestic industry since the original investigations, including some plant closures and cessations of wind tower production as well as some expansions and new entrants into the U.S. market.[112] U.S. producers were located in several regions of the United States during the period of review, including the West Coast.[113] One domestic producer, ***, transfers the majority of its shipments to its affiliate.[114]

In 2012, U.S. shipments of subject imports from China accounted for *** percent of the U.S. market. Subject imports have largely been absent from the U.S. market thereafter.[115]

Nonsubject imports from sources other than nonsubject producer CS Wind (Vietnam) also accounted for a growing share of the U.S. market overall following 2012. They accounted for *** percent in 2012, *** percent in 2013, *** percent in 2014, *** percent in 2015, *** percent in 2016, and *** percent in 2017; their share of the U.S. market was *** percent in interim 2017 and *** percent in interim 2018.[116] Nonsubject wind towers from Vietnam accounted for *** percent of the U.S. wind towers market in 2012 and *** percent in 2016.[117]

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[110] *Original Determinations*, USITC Pub. 4372 at 17.

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

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

[113] CR/PR at Table I-6.

[114] CR at III-8; PR at III-6.

[115] CR/PR at Table I-9. After 2013, the only subject imports were *** units from China in 2014. CR/PR at Table IV-1.

[116] CR/PR at Table C-1. Import sources other than China and Vietnam included Canada, Denmark, Egypt, Indonesia, Italy, Korea, Mexico, and Spain. CR/PR at IV-1.

[117] CR/PR at Table C-1. These imports *** in 2013, 2014, 2015, 2017, and interim 2018. *Id.*

3. Substitutability and Other Conditions

a) The Original Investigations

In the original investigations, the Commission found that subject imports and domestically produced wind towers were at least moderately substitutable once production facilities were qualified for a wind project. It observed that most OEMs required qualification or certification of wind tower producers and that, typically, an OEM would only order wind towers from a supplier it had qualified. However, as demand rose under uncertainty of the renewal of the PTC and other federal incentives, OEMs qualified more domestic suppliers and were sometimes willing to perform qualification after production had begun on tower orders.[118]

The Commission also found that, because wind towers are large, heavy, and require specialized equipment to lift and move, purchasers reported considering both sales price and transportation costs when making purchase decisions. It observed that wind towers were typically sold on an ex-works basis in the case of domestic producers and f.o.b. port of export in the case of subject and nonsubject imports. The Commission further observed that shipping to the project site was arranged by the OEM, which given wind towers' large size, could be both logistically challenging and expensive.[119]

b) The Current Reviews

The record in these reviews indicates that there is a moderate-to-high degree of substitutability between domestically produced wind towers and wind towers imported from China and Vietnam.[120] As discussed above, the majority of market participants reported that the domestic like product, subject imports from China, and subject imports from Vietnam are interchangeable in all comparisons,[121] and most purchasers reported that domestically produced wind towers are comparable with subject imports from China and Vietnam in the majority of purchasing factors.[122]

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[118] *Original Determinations*, USITC Pub. 4372 at 17-18.

[119] *Original Determinations*, USITC Pub. 4372 at 18.

[120] CR at II-20; PR at II-14.

[121] CR/PR at Table II-15. The majority of market participants also reported that the domestic like product, subject imports from China, subject imports from Vietnam, and imports from nonsubject sources are interchangeable in all comparisons. *Id.*

[122] CR/PR at Table II-14. With respect to comparisons to wind towers from China, more purchasers reported that U.S. produced wind towers were superior in terms of transportation costs and inferior in terms of price; an equal number of purchasers reported U.S. produced wind towers to be comparable or inferior in terms of discounts offered and product range. *Id.* With respect to comparisons to wind towers from Vietnam, more purchasers reported that U.S. produced wind towers were superior in terms of transportation costs and inferior in terms of price; an equal number of purchasers reported U.S. produced wind towers to be comparable or inferior in terms of discounts offered. *Id.*

The record in these reviews also indicates that price remains an important factor in purchasing decisions. The three factors identified by purchasers to be among their top three purchasing factors were quality, price/landed cost, and availability/capacity.[123] In addition, four out of five responding purchasers identified price as a very important purchasing factor, with only availability, delivery time, and reliability of supply being identified as very important by all five responding purchasers.[124] As in the original investigations, given the size of wind towers and the resulting difficulty and expense in moving them, shipping costs account for a substantial share of the total delivered cost of wind towers.[125] Most purchasers (four out of five) reported that they usually purchase wind towers offered at the lowest delivered cost; the remaining purchaser reported that it always does.[126]

As in the original investigations, a limited number of OEMs purchase wind towers. Since the original investigations, however, there have been a number of industry consolidations and closures of OEMs. As a result, the *** accounted for approximately 91 percent of the wind tower market during 2012 through 2017.[127] Purchasers reported contacting between one and ten suppliers before making a purchase, with *** reporting that they contacted between three and eight suppliers.[128] Four out of five responding purchasers reported that they had projects for which both a domestic producer and Chinese or Vietnamese supplier submitted bids.[129] Most purchasers continue to require suppliers to become certified or qualified to sell wind towers to their firm, with the reported time to qualify ranging from 100 to 365 days.[130] Wind towers continue to be primarily produced to order, and U.S. purchasers reported that all of their commercial shipments were produced to order, with lead times ranging from 90 to 160 days.[131] U.S. producers reported selling the vast majority of their wind towers via long-term contracts,[132] and according to the Coalition, these contracts continue to be subject to renegotiation, consistent with what the Commission observed in the original determinations.[133]

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

[124] CR/PR at Table II-11. All responding purchasers reported that the U.S. produced wind towers were comparable with subject imports from China and Vietnam in terms of quality that meets or exceeds industry standards as well as reliability of supply. Similarly, most purchasers reported that U.S. produced wind towers were comparable with subject imports from China and Vietnam in terms of availability and delivery time. In contrast, most purchasers reported that domestically produced wind towers were inferior (i.e., priced higher) compared to wind towers from China and Vietnam. *Id.*

[125] CR at V-3; PR at V-2.

[126] CR at V-4; PR at V-2.

[127] CR at I-38 – I-39; PR at I-29 – I-30.

[128] CR at V-6; PR at V-3.

[129] CR at V-9; PR at V-5.

[130] CR at II-24; PR at II-16.

[131] CR at II-20; PR at II-14.

[132] CR at V-5; PR at V-3.

[133] Coalition Prehearing Br. at 29-33; Coalition Posthearing Br. at 3.

Steel plate remains the primary raw material used in making wind towers.[134] During the period of review, steel prices fluctuated, dropping to their lowest level in late 2015 and early 2016 before increasing by more than 50 percent by February 2019.[135] Raw materials accounted for a substantial but declining share of the cost of goods sold ("COGS") for wind towers. From 2012 through 2017, raw materials' share of COGS declined from *** percent to *** percent; they accounted for *** percent of COGS in interim 2017 and *** percent in interim 2018.[136] Most U.S. producers reported increased raw material prices since 2012, and they also reported anticipating further increases in raw material prices, noting in particular increases in steel prices in 2018 as a result of steel tariffs under Section 232 of the Trade Expansion Act of 1962 ("Section 232 tariffs").[137]

On August 18, 2017, the United States Trade Representative ("USTR") initiated an investigation concerning imports from China pursuant to Section 301 of the Trade Act of 1974. As a result of the investigation, USTR determined to impose an additional *ad valorem* duty of 25 percent on certain imports from China. Wind towers were included in the list of articles subject to the additional 25 percent duty ("Section 301 tariffs") effective August 23, 2018.[138]

C. Likely Volume of Subject Imports

1. The Original Investigations

In its original determinations, the Commission found the volume of subject imports and the increase in volume to be significant, both in absolute terms and relative to consumption and production in the United States. In particular, it observed that demand for wind towers was particularly strong in interim 2012 as a result of the anticipated non-renewal of the PTC and that subject imports were substantially higher during that period, compared to interim 2011. In contrast, even though demand was higher, the domestic industry's market share was lower in interim 2012 than in interim 2011. The Commission found that the increase in subject import market share came primarily at the expense of the domestic industry. It also found that the gain in subject import market share was not the result of the domestic industry's inability to

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[134] CR/PR at V-1.

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

[136] CR/PR at V-1.

[137] CR at V-2; PR at V-1-2. On April 19, 2017, Commerce initiated a Section 232 investigation, under the Trade Expansion Act of 1962, 19 U.S.C. §1862, as amended, to assess the impact of steel imports on the national security of the United States. On March 8, 2018, the President announced his decision to impose 25 percent *ad valorem* duties on all steel mill products from certain U.S. trading partners, including China. CR at I-16 – I-20; PR at I-14 – I-17.

[138] CR at I-20 – I-22; PR at I-17 – I-18; see also Initiation of Section 301 Investigation; Hearing; and Request for Public Comments: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation, 82 Fed. Reg. 40823 (Aug. 24, 2017); Notice of Action Pursuant to Section 301: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation, 82 Fed. Reg. 40823 (Aug. 16, 2018).

satisfy increased demand in interim 2012.[139] For purposes of his threat determination, Commissioner Pinkert found that the trends in the volume of subject imports, particularly at the end of the period of investigation, to be particularly important, emphasizing that these trends reflected the interests and capabilities of subject producers to increase the volume of subject imports significantly over a short period of time and that subject producers were increasingly export-oriented.[140]

1. The Current Reviews

In these reviews, several factors support the conclusion that the volume of cumulated subject imports is likely to be significant in the event of revocation.

There is substantial production capacity in the subject countries. As discussed above in section III.C., although no subject producer participated in these reviews, available information indicates that subject producers in China and Vietnam have production capacity for wind towers that is between 16,920 and 17,470 units at a minimum.[141] Thus, the production capacity for cumulated subject imports, which reflects only the data for firms whose production or production capacity could be identified, is almost four times apparent U.S. consumption at its highest level during the review period in 2016.[142]

Moreover, the record in these reviews indicates that the subject industries, on a cumulated basis, continue to be export-oriented. During the review, period subject producers exported to other countries quantities of wind towers that were substantial relative to apparent U.S. consumption, notwithstanding that exports to the United States fell after 2012 following imposition of the orders.[143] Absent the discipline of the orders, the U.S. market would likely be a particularly attractive market to which subject producers would likely direct significant quantities of subject merchandise, consistent with what was observed in 2012, when the U.S. market was the largest single-country export market for producers in both China and Vietnam.[144] Indeed, in the original investigations, the Commission observed that subject producers demonstrated the ability to rapidly penetrate the U.S. market as they surged into the United States, particularly in interim 2012. Subject producers would likely repeat this behavior, given that imports from the subject countries have not recovered the total export volume lost following the imposition of the antidumping and countervailing duty orders in the United States.[145] [146] The existence of higher prices in the United States and third country barriers to

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[139] *Original Determinations*, USITC Pub. 4372 at 19-21.

[140] *Original Determinations*, USITC Pub. 4372 at 32-34.

[141] *See* CR/PR at Figure IV-3 (first quarter 2018 data for subject producers in China), CR at IV-15, PR at IV-11 – IV-12 (available data for subject producers in Vietnam).

[142] As discussed above in section IV.B.1., apparent U.S. consumption in 2016 was 4,404 units. CR/PR at Table C-1.

[143] CR/PR at Tables IV-3 and IV-4.

[144] CR/PR at Tables IV-3 and IV-4.

[145] CR/PR at Tables IV-3 and IV-4.

subject imports is also likely to make the U.S. market relatively more attractive.[147] The record shows that, in general, the average unit value for exports to the United States from China and Vietnam were substantially higher during the POR than the AUVs achieved by China and Vietnam in their leading export markets.[148]

There is no information in the record that indicates that Section 301 tariffs are likely to curtail significantly exports of wind towers from China in the reasonably foreseeable future, in light of the other factors discussed above.[149] [150] Nor do we find that purchasers' requirements of certifications are likely to preclude subject imports from entering the U.S. market in significant quantities in the near future. ***.[151] Further, although ***, we observe, as discussed above, in the original investigations, that OEMs were sometimes willing to perform qualification after production had begun on tower orders and that UBI ***.[152]

Accordingly, based on subject producers' substantial production capacity, their export orientation, the relative attractiveness of the U.S. market, and the behavior of subject producers in the original investigations, we find that the likely volume of cumulated subject imports, in absolute terms and relative to U.S. production and consumption, would be significant in the event of revocation.[153]

(…Continued)

[146] Moreover, the fact that CS Wind (Vietnam) continued to ship wind towers to the U.S. market in limited quantities while subject to duties and the fact that *** further supports that the United States is an attractive market for exports generally. See CR/PR at Tables IV-3 and IV-4; CR/PR at Table IV-2.

[147] Australia imposed antidumping duty orders on wind towers from China, although it terminated its investigation with respect to wind towers from Vietnam. CR at IV-17 – IV-18; PR at IV-14 – IV-15.

[148] CR/PR at Table IV-3 and Table IV-4; CR/PR at Table IV-2. We observe these data may contain out-of-scope products. CR/PR at Table IV-3 note and Table IV-4 note.

[149] Notwithstanding the 25 percent *ad valorem* duty imposed by the Section 301 tariffs, we observe that Commerce's final weighted-average dumping margins for subject imports from China ranged from 44.99 percent to 70.63 percent and its final countervailable subsidy rate for subject imports from China ranged from 21.86 percent to 34.81 percent. CR at I-3, I-20-22; PR at I-2-3, I-17-18.

[150] Commissioner Kearns does not join the preceding footnote. He notes that the average unit value of the domestic industry's U.S. shipments exceeded the average unit value of China's exports to all markets by margins ranging from 33 to 55 percent during the POR. CR/PR at Tables III-6 and IV-3. Thus he finds that the U.S. market would be attractive to exporters from China even with the 25 percent *ad valorem* duty imposed under section 301.

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

[152] *Original Determinations*, USITC Pub. 4372 at 18 and Confidential Report at VII-14.

[153] There were no reported inventories of U.S. imports of wind towers from subject countries. CR at IV-5; PR at IV-4. In addition, because no subject producer participated in these investigations, there is little information regarding the product shifting ability of subject producers. The Coalition argues that there are several producers of ships and rail cars in Vietnam that could easily shift production to wind towers. Coalition Prehearing Br. at 9.

D. Likely Price Effects

1. The Original Investigations

In the original investigations, the Commission reiterated that subject imports and domestically produced wind towers are generally substitutable. It also found that price or total cost was ranked the single most important factor in purchasing decisions by five of nine purchasers and that, despite steel and transportation costs being substantial, f.o.b. prices were the single largest component of total cost for purchasers.[154]

In light of the made-to-order nature of wind towers and the varying processes used by OEMs in purchasing wind towers, the Commission obtained pricing data from purchasers, which accounted for both *** of subject imports and purchases of domestically produced wind towers during the period of investigation. Purchase price data supplied by OEMs for individual wind projects indicated that the subject imports generally had lower prices than domestic wind towers on an f.o.b. basis. However, the Commission found that, in most instances, subject imports were priced higher than domestic product when the subject imports and domestic wind towers were compared on the basis of total delivered cost to the purchaser for the same project. Accordingly, because the record did not indicate that, at least on a delivered basis, subject imports were underselling domestic wind towers, it did not find evidence of significant underselling.[155]

Notwithstanding the lack of evidence of significant underselling, the Commission found that the small number of OEMs in the market, the importance of price, the OEMs' pattern of negotiating prices with domestic producers, and the availability of alternative sources of supply, particularly subject imports, combined to place pressure on domestic producers to discipline their prices. Given the strong demand for wind towers during the period of investigation, the domestic industry should have been able to increase prices; however, the record indicated that subject imports limited the domestic industry's ability to recover its costs. Accordingly, the Commission found that subject imports prevented price increases, which otherwise would have occurred, to a significant degree.[156]

For purposes of his threat analysis, Commissioner Pinkert emphasized that the gap between the delivered prices of domestically produced wind towers and subject imports shrank during the period of investigation. He found this trend towards converging prices to indicate that, as subject producers sought to maintain a significant volume of imports and share of the U.S. market, they would need to sell at increasingly competitive prices, which would lead U.S. producers to constrain their own pricing. Thus, he found that, absent relief, subject imports would have an adverse effect on domestic prices in the imminent future.[157]

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[154] *Original Determinations*, USITC Pub. 4372 at 22.
[155] *Original Determinations*, USITC Pub. 4372 at 22-23.
[156] *Original Determinations*, USITC Pub. 4372 at 23-25.
[157] *Original Determinations*, USITC Pub. 4372 at 34-35.

2. The Current Reviews

As described above, the record in the current reviews suggests that there is a moderate-to-high degree of substitutability among subject imports from China and Vietnam and between these imports and the domestic like product and that price plays an important role in purchasing decisions.

Because the subject imports for the most part exited the U.S. market following the imposition of the orders, the record contains limited data regarding pricing comparisons. The limited data on the record, however, are consistent with what was observed in the original investigations, with purchase price data supplied by OEMs for individual wind projects showing that the subject imports generally had lower prices than domestic wind towers on an f.o.b. basis, but were priced higher than the domestic product when compared on the basis of total delivered cost.[158]

We further find that several of the factors that the Commission relied upon in finding price effects in the original investigations continued during the period of review in ways that make it likely that subject imports likely will have significant effects on domestic prices if the orders were revoked. The limited number of OEMs that purchase wind towers became even smaller during the period of review as the result of closures and consolidations, resulting in *** accounting for 91 percent of the market.[159] In addition, unlike in the original investigations in which OEMs indicated that they did not typically solicit multiple bids from wind tower producers,[160] most purchasers reported contacting multiple suppliers before purchasing wind towers in these reviews.[161] Furthermore, according to the Coalition, wind tower prices continue to be negotiated on an f.o.b. rather than a delivered basis,[162] and purchasers will use the high degree of interchangeability and the availability of other sources of supply to put downward pressure on prices of wind towers both in initial sales as well as in renegotiations of sales prices in existing contracts.[163] Given the degree of interchangeability between the domestic like product and subject imports, the continued importance of price in purchasing decisions, the concentrated customer base, and their bidding and negotiation processes, upon revocation, subject imports would likely be used to place downward pressure on domestic prices, as they did in the original investigations.

Moreover, as previously discussed, domestic wind tower producers reported that raw material costs increased during the period of review, in part as a result of the Section 232 tariffs, and several producers have reported that they have been unable to increase their prices by the full amount of the raw material cost increases.[164] If the orders were revoked, the increased competitive pressure from subject imports would likely further prevent the domestic

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[158] CR/PR at Tables V-4a, V-4b, V-5a, and V-5b.
[159] CR at I-38 – I-39, PR at I-29 – 30.
[160] *Original Determinations*, USITC Pub. 4372 at 22.
[161] CR at V-6; PR at V-3.
[162] Coalition Prehearing Br. at 33-36; Coalition Posthearing Br. at 4, 43-45.
[163] Coalition Prehearing Br. at 29-33; Coalition Posthearing Br. at 3.
[164] CR at V-2; PR at V-1.

industry from increasing prices to cover rising costs, notwithstanding any increase in demand, consistent with what the Commission observed in the original investigations. Thus, in light of the foregoing, we conclude that, if the orders were revoked, the likely significant volume of cumulated subject imports would again place competitive pressure on the prices of the domestic like product, resulting in a recurrence of the significant price suppressing effects that occurred during the original investigations.

E. Likely Impact

1. The Original Investigations

In the original investigations, the Commission found that the domestic industry's performance was adversely affected by cumulated subject imports during the period of investigation. In particular, the Commission found that the domestic industry was unable to benefit from the sharp increase in demand in interim 2012 due to subject imports, and instead, it experienced a decline in market share and only modest increases in production and U.S. shipments. In addition, as a result of the competitive pressure on the domestic industry to keep f.o.b. prices low or lose sales to subject imports, the domestic industry was unable to raise prices sufficiently to cover increased costs, resulting in declines in operating income and capital expenditures.[165]

The Commission also considered other factors that may have had an impact on the domestic industry. In particular, the Commission observed that nonsubject imports had a declining presence during 2009 to 2011, and remained steady when comparing the interim periods. Consequently, the subject imports' higher market share in interim 2012 compared to interim 2011 came almost entirely at the expense of the domestic industry. In addition, the Commission rejected respondents' arguments that the domestic industry was unable to supply more wind towers during the period of investigation, finding that the domestic industry had excess capacity from which it could have supplied the U.S. market.[166]

In his threat determination, Commissioner Pinkert found that the continued and likely intensifying price competition from the significant and increasing volume of subject imports likely would materially injure the domestic industry, which was already struggling, in the imminent future.[167]

2. The Current Reviews

The record in these reviews indicates that the orders have been effective in constraining subject imports, and as a result the condition of the domestic industry improved overall during the period of review. The domestic industry's capacity increased overall during the review

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[165] *Original Determinations*, USITC Pub. 4372 at 25-27.
[166] *Original Determinations*, USITC Pub. 4372 at 25-30.
[167] *Original Determinations*, USITC Pub. 4372 at 35.

period,[168] as did its production.[169] As a result, the domestic industry's capacity utilization rate also improved overall during the full years of the period of review, although it reached its lowest level in interim 2018.[170] The quantity of the domestic industry's U.S. shipments of wind towers also increased overall during the full year periods, although it was lower in interim 2018 than in interim 2017.[171] The domestic industry's share of the U.S. market also increased overall from 2012 to 2017, but was lower in interim 2018 than in interim 2017.[172] Ending inventory quantities rose during the period of review.[173]

The domestic industry's employment-related indicators showed improvement. The number of production related workers ("PRWs") and wages paid increased from 2012 to 2017, although both were lower in interim 2018 than in interim 2017.[174] Hours worked increased overall from 2012 to 2017, but were lower in interim 2018 than in interim 2017.[175] Productivity increased from 2012 to 2016 but was lower in 2017 and remained steady in the interim periods.[176]

The domestic industry's financial performance also improved overall during the period of review. Its gross profits, net income, and operating income improved overall from 2012 to

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[168] The domestic industry's production capacity was 2,548 units in 2012, 2,371 units in 2013, 2,876 units in 2014, 3,164 units in 2015, 3,843 units in 2016, and 4,092 units in 2017; it was 2,030 units in interim 2017 and 2,075 units in interim 2018. CR/PR at Table C-1.

[169] The domestic industry's production was 1,564 units in 2012, 1,453 units in 2013, 2,392 units in 2014, 2,727 units in 2015, 3,070 units in 2016, and 2,780 units in 2017; it was 1,479 units in interim 2017 and 1,262 units in interim 2018. CR/PR at Table C-1.

[170] The domestic industry's capacity utilization rate was 61.4 percent in 2012, 61.3 percent in 2013, 83.2 percent in 2014, 86.2 percent in 2015, 79.9 percent in 2016, and 67.9 percent in 2017; it was 72.9 percent in interim 2017 and 60.8 percent in interim 2018. CR/PR at Table C-1.

[171] U.S. shipments were 1,471 units in 2012, *** units in 2013, 2,312 units in 2014, 2,672 units in 2015, 3,098 units in 2016, and 2,658 units in 2017; they were 1,454 units in interim 2017 and *** units in interim 2018. CR/PR at Table C-1.

[172] The domestic industry's share of the U.S. market was 37.4 percent in 2012, *** percent in 2013, 69.5 percent in 2014, 66.7 percent in 2015, 70.3 percent in 2016, and 69.4 percent in 2017; it was 69.0 percent in interim 2017 and 66.4 percent in interim 2018. CR/PR at Table C-1.

[173] The domestic industry's ending inventory quantities were *** units in 2012, *** units in 2013, *** units in 2014, *** units in 2015, *** units in 2016, and *** units in 2017; they were *** units in interim 2017 and *** units in interim 2018. CR/PR at Table C-1.

[174] The number of PRWs was 1,386 in 2012, 1,543 in 2013, 2,017 in 2014, 2,140 in 2015, 2,254 in 2016, and 2,317 in 2017, 2,407 in interim 2017, and 2,153 in interim 2018. Wages paid were $76.5 million in 2012, $97.8 million in 2013, $131.3 million in 2014, $134.6 million in 2015, $145.5 million in 2016, and $152.6 million in 2017; they were $81.0 million in interim 2017 and $70.6 million in interim 2018. CR/PR at Table C-1.

[175] Hours worked were 2,673 in 2012, 2,611 in 2013, 3,474 in 2014, 3,636 in 2015, 3,745 in 2016, and 4,099 in 2017; they were 2,204 in interim 2017 and 1,821 in interim 2018. CR/PR at Table C-1.

[176] Productivity per 1,000 hours was 0.6 units in 2012 and 2013, 0.7 units in 2014, 0.8 units in 2015 and 2016, and 0.7 units in 2017; it was 0.7 units in interim 2017 and interim 2018. CR/PR at Table C-1.

2017, although each was lower in interim 2018 than in interim 2017.[177] The domestic industry's operating margin increased overall from 2012 to 2017, but was lower in interim 2018 than in interim 2017.[178] Capital expenditures increased overall from 2012 to 2017, but were lower in interim 2018 than in interim 2017.[179] Given the improved condition of the domestic industry following the imposition of the orders, we find that the domestic industry is not vulnerable, notwithstanding declines in its financial indicators during the latter part of the period of review.

As discussed above, we conclude that the revocation of the antidumping and countervailing duty orders on subject imports from China and Vietnam would likely lead to an increased and significant volume of cumulated subject imports that would likely have significant effects on the domestic industry's prices. As further discussed above the domestic industry is likely to face rising costs in the reasonably foreseeable future, as prices for raw materials are expected to continue to rise. The price competition caused by the likely increased volume of cumulated subject imports will likely preclude the domestic industry from being able to raise prices commensurately with these increased costs, notwithstanding anticipated growth in demand. Consequently, the competitive pressure the subject imports will likely place on the domestic industry would likely have the effect of causing the industry to lose market share, revenues, or both, any of which would have a negative impact on the domestic industry's performance. In light of these likely adverse effects, we find that cumulated subject imports would likely have a significant impact on production, shipments, sales, market share, and revenue of the domestic industry. These reductions would have a direct adverse impact on the domestic industry's profitability and employment. We conclude that, if the orders were revoked, subject imports from China and Vietnam would be likely to have a significant impact on the domestic industry within a reasonably foreseeable time.

We have also considered factors other than subject imports in the U.S. market. As discussed above, nonsubject imports increased their presence in the U.S. market during the period of review. Notwithstanding this, however, the domestic industry was able to improve its performance. Given the interchangeability of imports from all sources and the domestic like product, the importance of price in purchasing decisions, and the shifts in market share

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[177] CR/PR at Table C-1. Gross profits were $*** in 2012, $*** in 2013, $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; they were $*** in interim 2018. Operating income was $*** in 2012, $*** in 2013, $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; it was $*** in interim 2017 and $*** in interim 2018. Net income was *** in 2012, *** in 2013, $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; it was $*** in interim 2017 and $*** in interim 2018. *Id.*

[178] The domestic industry's operating margin was *** percent in 2012, *** percent in 2013, *** percent in 2014, *** percent in 2015, *** percent in 2016, and *** percent in 2017; it was *** percent in interim 2017 and *** percent in interim 2018. CR/PR at Table C-1.

[179] Capital expenditures were $*** in 2012, $*** in 2013, $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; they were $*** in interim 2017 and $*** in interim 2018. CR/PR at Table C-1.

The domestic industry *** research and development ("R&D") costs in 2012 and 2013, but reported increased R&D expenses from 2014 to 2017; they were lower in interim 2018 than in interim 2017. R&D expenses were $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; they were $*** in interim 2018. *Id*.

observed in the original investigations, the likely significant increased volume of subject imports would likely again take market share from both the domestic industry and nonsubject imports. Moreover, as previously stated, subject imports are again likely to place significant competitive pressure on the U.S. prices for the domestic like product. In light of this, we find that subject imports would likely have adverse effects distinct from those of nonsubject imports.

Thus, we conclude that revocation of the antidumping and countervailing duty orders on wind towers from China and Vietnam would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

V. Conclusion

For the foregoing reasons, we determine that revocation of the antidumping and countervailing duty orders on wind towers from China and Vietnam would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

SEPARATE AND DISSENTING VIEWS OF CHAIRMAN DAVID S. JOHANSON

I. Introduction

Based on the record in these five-year reviews, I determine, under section 751(c) of the Tariff Act of 1930, as amended,[1] that revocation of the antidumping duty order and countervailing duty order on wind towers from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. I further determine that revocation of the antidumping duty order on wind towers from Vietnam would not be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. I therefore concur with the majority with respect to the orders on China and dissent with respect to the orders on Vietnam. I explain below my reasoning for declining to exercise my discretion to cumulate subject imports from China and Vietnam and for reaching the determinations I make with respect to the orders from each subject country. Except as otherwise noted, I join the majority with respect to sections I, II, III.A-III.C, and IV.A-IV.B of their views.

II. Cumulation

A. Likely Conditions of Competition

On March 29, 2017, Commerce published notice of an amended final determination excluding CS Wind from the antidumping duty order on wind towers from Vietnam.[2] The amendment is significant on this record because CS Wind is Vietnam's largest producer of wind towers and the *** Vietnamese producer that has exported to the United States. By effectively redefining what is subject and nonsubject merchandise from Vietnam, this recent amendment changes the likely competitive landscape in the United States for the two subject foreign industries in the event of revocation. It is for this reason that I exercise my discretion not to cumulate subject imports for purposes of my likely injury analysis.

In terms of capacity, the subject industry in Vietnam has been reduced by more than half with this redefinition -- down approximately 56 percent, from 1600 wind towers to 700 essentially overnight.[3] CS Wind's capacity is 900 wind towers and Vina Halla's and UBI's are 400

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[1] 19 U.S.C. § 1675(c).

[2] *Utility Scale Wind Towers from the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 82 Fed. Reg. 15493 (Dep't of Commerce Mar. 29, 2017; effective Mar. 26, 2017). The history of the litigation surrounding this amendment and Commerce's Third Final Redetermination is discussed in the Commission Report. CR at IV-15 n.30; PR at IV-11-12 n.30.

[3] *See* CR at IV-14-IV-15, PR at IV-11-IV-12.

and 300, respectively.[4] The size of the relevant industry is therefore substantially diminished as it no longer includes Vietnam's largest producer.

Moreover, *** exported wind towers to the United States during the original investigation, *** exported wind towers to the United States during the period of review, and ***.[5] *** is certified as a supplier in the United States.[6]

The industry in China, in contrast to the industry in Vietnam, was the largest source of imports in the U.S. market during the original investigations (U.S. shipments of imports from China were *** percent of apparent U.S. consumption at the end of the period of investigation) and continued to supply the U.S. market during the period of review.[7] This industry's capacity since the original investigations has not diminished. Available information indicates that production capacity for wind towers in China, for firms whose production or production capacity could be identified, ranged between 16,220 and 16,770 units annually as of early 2019.[8] The record also shows that *** Chinese suppliers are certified in the United States,[9] and further that their production capacity has increased.[10] ***.[11]

In addition, GTA data, which may include out-of-scope products, indicate that the United States was by far the largest single-country export market for wind towers from China in 2012, although exports of wind towers from China to the United States declined substantially after that.[12] GTA data also show that the United States was the largest single-country export market for wind towers from Vietnam in 2012;[13] *** exports were from now nonsubject Vietnamese producer CS Wind.[14]

The wind tower industry in Vietnam, after the exclusion of CS Wind, is therefore a foreign industry that ***. The differences between the capacities and the import patterns of the subject industry in Vietnam and the subject industry in China on this record are now clearly distinguishable. Further, the competitive position in the U.S. market of those Vietnamese firms currently subject to the order would be appreciably different upon revocation from subject Chinese firms due to Chinese firms' substantial prior experience in the U.S. market, continued presence during the review period, their certifications from U.S. purchasers, and their size and growth. Based on this record, I find that subject imports of wind towers from China and Vietnam would likely compete in the U.S. market under different conditions of competition

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[4] CR at IV-15, PR at IV-11-IV-12.

[5] *See* CR/PR at IV-1 & Tables IV-1-IV-2; Importer Questionnaire Response of ***; *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-11, VII-14.

[6] CR/PR at Table II-12; *see* CR at II-24, PR at II-17.

[7] *Original Determinations*, USITC Pub. 4372, Confidential Report at Table IV-6; CR/PR at Table C-1.

[8] *Calculated from* CR/PR at Figure IV-3.

[9] CR/PR at Table II-12 (***).

[10] CR/PR at Figure IV-3; *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-4.

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

[12] CR/PR at Table IV-3.

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

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

after revocation, and therefore I do not exercise my discretion to cumulate subject imports from China with subject imports from Vietnam.

III. Revocation of the Antidumping and Countervailing Duty Orders on China Would Likely Lead to Continuation or Recurrence of Material Injury Within a Reasonably Foreseeable Time

A. Likely Volume of Subject Imports

In these reviews, several factors support the conclusion that the volume of subject imports from China is likely to be significant in the event of revocation.

There is substantial production capacity in China. Although no subject producer in China participated in these reviews, available information indicates that subject producers in China have production capacity that is between 16,220 and 16,770 units, at a minimum.[15] Thus, the production capacity for wind towers from China, for firms whose production or production capacity could be identified, is 368 to 381 percent of apparent U.S. consumption in 2016, when U.S. consumption was at its highest level during the review period.[16]

*** Chinese producers *** are currently listed by U.S. purchasers as qualified suppliers, *** of which exported to the United States during the original investigations.[17] Publicly reported production capacity at these *** firms increased by about 45 percent, from *** towers to *** towers, from 2012 to 2019.[18] The additional *** towers translates to an additional production capacity of about *** GW based on the average U.S. turbine size in 2017.[19] This *** GW of production capacity is equivalent to approximately *** percent of capacity installed in the United States in 2018.[20]

During the original investigations, *** additional firms (***) also reported exporting to the United States.[21] In the current reviews, these firms' publicly reported production capacity has remained the same at *** towers per year.[22] Combined with the production capacity of the *** firms listed above, the five firms have the capacity to supply *** towers annually. This translates to a production capacity of about ***, or almost twice the size of the U.S. market in 2018 based on the size of the average turbine installed in the U.S. in 2017.[23]

Overall, the wind tower production capacity in China significantly exceeded Chinese home demand in 2018, indicating that there is significant capacity that could be directed to

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[15] *See* CR/PR at Figure IV-3 (first quarter 2019 data for subject producers in China).

[16] Apparent U.S. consumption in 2016 was 4,404 units. CR/PR at Table C-1.

[17] CR/PR at Table II-12; *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-4.

[18] CR/PR at Fig. IV-3; *Original Determinations*, USITC Pub. 4372, Confidential Report at Table VII-1.

[19] *See* CR/PR at Fig. I-2.

[20] CR/PR at Fig. II-3.

[21] *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-4.

[22] CR/PR at Fig. IV-3.

[23] CR/PR at Fig. I-2 & Fig. II-3.

supply the United States market.[24] Also, many of the *** Chinese firms that were identified as producers (but not exporters to the United States) in both the original investigations and current reviews continue to expand, adding annual capacity to produce *** to *** towers.[25]

Moreover, the record in these reviews indicates that the subject industry in China continues to be export-oriented.[26] Firms for which information is available on the record indicate that there are a number of active exporters. For example, CS Wind China has exported to Africa, Asia, Europe, and the United States; Titan recently supplied Vestas in Australia ***; and TSP recently supplied Goldwind in Australia and Vestas in Australia ***.[27] TSP exported about half of its production during January 2017 to June 2018 (operating at close to full capacity during this time period), with a majority of its exports going to markets in South America and Asia.[28] In addition, ***.[29]

The existence of higher prices in the United States and third country barriers to subject imports from China also increase the attractiveness of the U.S. market.[30]

Notably, the U.S. industry appears to be capable of supplying a higher volume of products than it was in 2011. While reported production capacity in 2011 and 2017, based on questionnaire data, was ***, the U.S. industry appears to have a much higher effective capacity today.[31] In the original investigations, the U.S. industry's production ranged from *** to *** towers during 2009–11.[32] While reported capacity was *** than production,[33] much of this capacity appeared overstated given the stability of production levels and issues surrounding the adequacy of supply.[34] On the other hand, U.S. production during 2015–17 ranged from *** to *** towers.[35] The *** towers produced in 2016 was a *** percent *** in production from the 2009 to 2011 peak, indicating that U.S. producers are ***. This reflects in part a *** by some firms that remained in the industry, but also reflects the entries, exits, and expansions that

[24] CR at IV-7-IV-8, PR at IV-5-IV-6; CR/PR at Fig. IV-3.

[25] CR/PR at Table IV-3; *Original Determinations*, USITC Pub. 4372, Confidential Report at Table VII-1.

[26] CR/PR at IV-6.

[27] CR at IV-9–IV-10, PR at IV-7-IV-8.

[28] CR at IV-11, PR at IV-8.

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

[30] CR/PR at Table IV-3 (China AUV data); Australia imposed antidumping duty orders on wind towers from China. CR at IV-17-IV-18, PR at IV-14-IV-15.

[31] CR/PR at Table III-4; *Original Determinations*, USITC Pub. 4372, Confidential Report at Table C-1.

[32] *Original Determinations*, USITC Pub. 4372, Confidential Report at Table C-1.

[33] *Original Determinations*, USITC Pub. 4372, Confidential Report at Table C-1.

[34] *Original Determinations*, USITC Pub. 4372, Dissenting Views at 8, 10.

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

occurred during 2012–17.[36] While a number of firms with *** exited the industry, Vestas, *** and Marmen opened an idled plant that it ***.[37]

Finally, there is no information in the record that indicates that Section 301 tariffs are likely to curtail significantly exports of wind towers from China in the reasonably foreseeable future, in light of the other factors discussed above.[38]

For all of these reasons, including the size and increased capacity of the Chinese firms that are currently certified in the United States or previously exported to the United States, their experience and qualifications in the U.S. market, and the recently improved ability of the domestic industry to supply the U.S. market, I find that the likely volume of subject imports from China, in absolute terms and relative to U.S. production and consumption, would be significant in the event of revocation.

B. Likely Price Effects

The record in the current reviews, as noted in conditions, suggests that there is a moderate-to-high degree of substitutability between subject imports from China and the domestic like product and that price plays an important role in purchasing decisions.[39]

Because subject imports from China for the most part exited the U.S. market following the imposition of the orders, the record contains limited data regarding pricing comparisons. Consistent with the original investigations, purchase price data supplied by OEMs for individual wind projects showed that subject imports from China generally had lower prices than domestic wind towers on an f.o.b. basis, but were priced higher than the domestic product when compared on the basis of total delivered cost.[40] Transportation costs typically account for a substantial share of the total delivered cost of wind towers and *** responding importers reported that purchasers arrange transportation.[41] Because transportation costs account for a substantial share of total delivered cost and OEMs are responsible for transportation costs, total delivered cost is an appropriate measure for comparing price.[42]

With the orders in place, the collected bid data show that ***.[43]

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[36] CR/PR at Table III-4; *Original Determinations*, USITC Pub. 4372, Confidential Report at Table III-5.

[37] CR/PR at Tables III-1, III-4; *Original Determinations*, USITC Pub. 4372, Confidential Report at Table III-5.

[38] I note that the average unit value of the domestic industry's U.S. shipments exceeded the average unit value of China's exports to all markets by margins ranging from 33 to 55 percent during the POR. CR/PR at Tables III-6 and IV-3. I find therefore that the U.S. market would be attractive to exporters from China even with the 25 percent *ad valorem* duty imposed under section 301.

[39] CR at II-20, PR at II-14; CR/PR at Tables II-10-II-11.

[40] CR/PR at Tables V-4a and V-5a.

[41] CR at V-3, PR at V-2.

[42] *Cf.* CR at V-4, PR at V-2.

[43] CR at V-9-V-10, PR at V-5.

I find it likely that subject imports from China will have significant effects on domestic prices if the orders are revoked. First, the volume of such imports will likely be significant, as I found above. Second, the limited number of OEMs that purchase wind towers became even smaller during the period of review as the result of closures and consolidations. This has resulted in *** accounting for 91 percent of the market.[44] In addition, most purchasers in these reviews reported contacting multiple suppliers before purchasing wind towers.[45] Finally, domestic wind tower producers reported that raw material costs increased during the period of review, in part as a result of the Section 232 tariffs, and several producers have reported that they have been unable to increase their prices by the full amount of the raw material cost increases.[46] Rising raw material costs and the likely increase in subject imports from China, coupled with the concentrated customer base and interchangeability of product will have an effect on the domestic industry's ability to raise prices to meet these rising costs.

Thus, I find that if the orders were revoked, the likely significant volume of subject imports from China would place pressure on the prices of the domestic like product, resulting in significant price suppressing effects that were not evident in the original investigations.

C. Likely Impact

The record in these reviews indicates that the domestic industry improved overall during the period of review. The domestic industry's capacity increased overall during the review period,[47] as did its production.[48] As a result, the domestic industry's capacity utilization rate also improved overall during the full years of the period of review, although it reached its lowest level in interim 2018.[49] The quantity of the domestic industry's U.S. shipments of wind towers also increased overall during the full year periods, although it was lower in interim 2018 than in interim 2017.[50] The domestic industry's share of the U.S. market also increased overall

[44] CR at I-38-I-39, PR at I-29-I-30.

[45] CR at V-6, PR at V-3.

[46] CR at V-2, PR at V-1.

[47] The domestic industry's production capacity was 2,548 units in 2012, 2,371 units in 2013, 2,876 units in 2014, 3,164 units in 2015, 3,843 units in 2016, and 4,092 units in 2017; it was 2,030 units in interim 2017 and 2,075 units in interim 2018. CR/PR at Table C-1.

[48] The domestic industry's production was 1,564 units in 2012, 1,453 units in 2013, 2,392 units in 2014, 2,727 units in 2015, 3,070 units in 2016, and 2,780 units in 2017; it was 1,479 units in interim 2017 and 1,262 units in interim 2018. CR/PR at Table C-1.

[49] The domestic industry's capacity utilization rate was 61.4 percent in 2012, 61.3 percent in 2013, 83.2 percent in 2014, 86.2 percent in 2015, 79.9 percent in 2016, and 67.9 percent in 2017; it was 72.9 percent in interim 2017 and 60.8 percent in interim 2018. CR/PR at Table C-1.

[50] U.S. shipments were 1,471 units in 2012, *** units in 2013, 2,312 units in 2014, 2,672 units in 2015, 3,098 units in 2016, and 2,658 units in 2017; they were 1,454 units in interim 2017 and *** units in interim 2018. CR/PR at Table C-1.

from 2012 to 2017, but was lower in interim 2018 than in interim 2017.[51] Ending inventory quantities rose during the period of review.[52]

The domestic industry's employment-related indicators showed improvement. The number of production related workers ("PRWs") and wages paid increased from 2012 to 2017, although both were lower in interim 2018 than in interim 2017.[53] Hours worked increased overall from 2012 to 2017, but were lower in interim 2018 than in interim 2017.[54] Productivity increased from 2012 to 2016 but was lower in 2017 and remained steady between the interim periods.[55]

The domestic industry's financial performance also improved overall during the period of review. Its gross profits, net income, and operating income improved overall from 2012 to 2017, although each was lower in interim 2018 than in interim 2017.[56] The domestic industry's operating margin increased overall from 2012 to 2017, but was lower in interim 2018 than in interim 2017.[57] Capital expenditures increased overall from 2012 to 2017, but were lower in interim 2018 than in interim 2017.[58] Given the improved condition of the domestic industry

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[51] The domestic industry's share of the U.S. market was 37.4 percent in 2012, *** percent in 2013, 69.5 percent in 2014, 66.7 percent in 2015, 70.3 percent in 2016, and 69.4 percent in 2017; it was 69.0 percent in interim 2017 and 66.4 percent in interim 2018. CR/PR at Table C-1.

[52] The domestic industry's ending inventory quantities were *** units in 2012, *** units in 2013, *** units in 2014, *** units in 2015, *** units in 2016, and *** units in 2017; they were *** units in interim 2017 and *** units in interim 2018. CR/PR at Table C-1.

[53] The number of PRWs was 1,386 in 2012, 1,543 in 2013, 2,017 in 2014, 2,140 in 2015, 2,254 in 2016, and 2,317 in 2017, 2,407 in interim 2017, and 2,153 in interim 2018. Wages paid were $76.5 million in 2012, $97.8 million in 2013, $131.3 million in 2014, $134.6 million in 2015, $145.5 million in 2016, and $152.6 million in 2017; they were $81.0 million in interim 2017 and $70.6 million in interim 2018. CR/PR at Table C-1.

[54] Hours worked were 2,673 in 2012, 2,611 in 2013, 3,474 in 2014, 3,636 in 2015, 3,745 in 2016, and 4,099 in 2017; they were 2,204 in interim 2017 and 1,821 in interim 2018. CR/PR at Table C-1.

[55] Productivity per 1,000 hours was 0.6 units in 2012 and 2013, 0.7 units in 2014, 0.8 units in 2015 and 2016, and 0.7 units in 2017; it was 0.7 units in interim 2017 and interim 2018. CR/PR at Table C-1.

[56] CR/PR at Table C-1. Gross profits were $*** in 2012, $*** in 2013, $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; they were $*** in interim 2018. Operating income was $*** in 2012, $*** in 2013, $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; it was $*** in interim 2017 and $*** in interim 2018. Net income was *** in 2012, *** in 2013, $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; it was $*** in interim 2017 and $*** in interim 2018. *Id.*

[57] The domestic industry's operating margin was *** percent in 2012, *** percent in 2013, *** percent in 2014, *** percent in 2015, *** percent in 2016, and *** percent in 2017; it was *** percent in interim 2017 and *** percent in interim 2018. CR/PR at Table C-1.

[58] Capital expenditures were $*** in 2012, $*** in 2013, $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; they were $*** in interim 2017 and $*** in interim 2018. CR/PR at Table C-1.

The domestic industry *** research and development ("R&D") costs in 2012 and 2013, but reported increased R&D expenses from 2014 to 2017; they were lower in interim 2018 than in interim

(Continued…)

following the imposition of the orders, I find that the domestic industry is not vulnerable, notwithstanding declines in its financial indicators during the latter part of the period of review.

As discussed above, I also find that the revocation of the antidumping and countervailing duty orders on subject imports from China would likely lead to an increased and significant volume of subject imports from China that would likely have significant effects on the domestic industry's prices. As further discussed above, the domestic industry is likely to face rising costs in the reasonably foreseeable future, as prices for raw materials are expected to continue to rise. The price competition caused by the likely increased volume of subject imports from China will likely preclude the domestic industry from being able to raise prices commensurately with these increased costs, notwithstanding anticipated growth in demand. Consequently, the competitive pressure the subject imports from China will likely place on the domestic industry would likely have the effect of causing the industry to lose market share, revenues, or both, any of which would have a negative impact on the domestic industry's performance. In light of these likely adverse effects, I find that subject imports from China would likely have a significant impact on production, shipments, sales, market share, and revenue of the domestic industry. These reductions would have a direct adverse impact on the domestic industry's profitability and employment. I conclude that, if the orders were revoked, subject imports from China would be likely to have a significant impact on the domestic industry within a reasonably foreseeable time.

I have also considered factors other than subject imports in the U.S. market. As discussed above, nonsubject imports increased their presence in the U.S. market during the period of review. Notwithstanding this, the domestic industry was able to improve its performance. Given the interchangeability of imports from all sources and the domestic like product and the importance of price in purchasing decisions, the likely significant increased volume of subject imports from China would likely take market share from both the domestic industry and nonsubject imports. Moreover, as previously stated, subject imports from China are likely to place significant competitive pressure on the U.S. prices for the domestic like product. In light of this, I find that subject imports from China would likely have adverse effects distinct from those of nonsubject imports.

Thus, I find that revocation of the antidumping and countervailing duty orders on wind towers from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

(…Continued)
2017. R&D expenses were $*** in 2014, $*** in 2015, $*** in 2016, and $*** in 2017; they were $*** in interim 2017 and $*** in interim 2018. *Id*.

IV. Revocation of the Antidumping Duty Order on Vietnam Would Not Likely Lead to Continuation or Recurrence of Material Injury Within a Reasonably Foreseeable Time

A. Likely Volume

Based on the record in these reviews, I find that the volume of subject imports from Vietnam would not likely be significant upon revocation. Commerce's amended antidumping duty order, discussed above, is central to this finding given its exclusion of CS Wind in March 2017. CS Wind is the largest producer in Vietnam.[59] This nonsubject producer *** exported to the United States during the original period of investigation.[60] Further, it *** exported to the United States during the period of review.[61] And *** U.S. importers' arranged imports from Vietnam.[62]

CS Wind is, in addition, *** certified to supply wind towers to *** in the United States.[63] Specifically, CS Wind is certified by *** U.S. purchasers, ***.[64] Pursuant to Commerce's amended final order, CS Wind's product is now nonsubject.

The only two producers of wind towers in Vietnam that are subject are Vina Halla and UBI. Vina Halla's production capacity as of 2017 was 400 towers and UBI's 300.[65] This is the same as the publicly reported production capacity for these firms in the original investigations.[66] Vina Halla *** wind towers to the United States during ***. UBI started producing in 2010 and had *** during the original investigations.[67] In the original

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[59] CR at IV-14-IV-15, PR at IV-11-IV-12 (900 towers).

[60] *See* CR/PR at IV-1 and Tables IV-1-IV-2; Importer Questionnaire Responses of ***; *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-11, VII-14.

[61] *See* CR/PR at IV-1 & Tables IV-1-IV-2; Importer Questionnaire Responses of ***; *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-11, VII-14.

[62] *See* CR/PR at IV-1 & Tables IV-1-IV-2; Importer Questionnaire Responses of ***; *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-11, VII-14.

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

[64] CR/PR at Table II-12. GE, Siemens Gamesa, and Vestas accounted for 91 percent of the U.S. wind turbine market. CR at I-38-I-39, PR at I-30 (GE, 42 percent; Vestas, 26 percent; Siemens Gamesa, 23 percent). *** requires a detailed manufacturing process plan and quality and inspection processes. *** requires various ISDO, manufacturing, and other audits; a record of past performance with other customers; and ***. ***. CR at II-24, PR at II-17. Two of five purchasers reported that a supplier had failed in its attempt to qualify product, or had lost its approved status since January 1, 2012. CR at II-24, PR at II-17. In the original investigations, the reported time required for certification ranged from less than 90 days to 270 days. *Original Determinations*, USITC Pub. 4372, Confidential Report at II-29. In these reviews, purchasers reported that the time to qualify a new supplier ranged from 100 to 365 days. CR at II-24, PR at II-17.

[65] CR at IV-15, PR at IV-11-IV-12.

[66] CR at IV-15, PR at IV-11-IV-12.

[67] *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-11.

investigations, UBI projected *** exports ***, and home market shipments ***.[68] UBI *** to the United States, ***. Data on our record regarding UBI show that UBI exported *** in 2013.[69] *** is certified by U.S. purchasers.[70]

The GTA data show that total exports from Vietnam (including those from nonsubject CS Wind) were 323 units in 2017.[71] The largest single-country export market for wind towers from Vietnam in that year (and in the previous year) was Australia.[72] The Australian Anti-Dumping Commission, in a recent report terminating an antidumping investigation involving wind towers from Vietnam, identified only one exporter and producer of the merchandise from Vietnam to Australia, CS Wind Corporation.[73]

Exports of towers from Vietnam to the United States show a similar pattern. During the original investigations, exports to the United States accounted for the *** share of the responding producers' total shipments ***. They accounted for *** percent in 2009, *** percent in 2010, *** percent in 2011, *** percent in interim 2011, and *** percent in interim 2012.[74] CS Wind was ***.

Thus, it is reasonable to conclude that, in addition to being the largest producer in Vietnam, CS Wind is the dominant exporter of towers in Vietnam. The result is that the GTA data on Vietnam are largely shaped by CS Wind's exporting. Further, we know that the U.S. import volume and pricing data on the record of the original investigations and these reviews ***. Such data are therefore not a reliable indicator of likely volume for the subject industry in Vietnam, which no longer includes CS Wind per Commerce's amended final order. To the contrary, for Vietnam, such data shed light on CS Wind's likely exports to the U.S. market.

I am mindful of UBI's reported representation in the original investigations of ***. This statement and the fact that UBI has not participated in these reviews has contributed to my giving domestic interested parties the benefit of the doubt with respect to the inquiries under cumulation of no discernible adverse impact and reasonable overlap of competition. However, this reported representation is insufficient to demonstrate a likely significant volume of imports from the subject industry in Vietnam. The reported representation on its face ***. Moreover, *** exported to the United States and *** is likely in the reasonably foreseeable future. I also find arguments respecting product shifting by certain shipbuilders or train producers in Vietnam

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[68] *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-14.

[69] EDIS Doc. 671667 (***).

[70] CR/PR at Table II-12; *see also Original Determinations*, USITC Pub. 4372, Confidential Report at VII-11 n.19.

[71] CR/PR at Table IV-6.

[72] CR/PR at Table IV-14.

[73] Australian Government, Anti-Dumping Commission, Alleged Dumping of Wind Towers Exported to Australia from the Socialist Republic of Vietnam, Termination Report No. 405, February 2018 at 9, 39. EDIS Doc. 671665.

[74] *Original Determinations*, USITC Pub. 4372, Confidential Report at VII-4. *See also* CR/PR at Table IV-4 (GTA data showing exports to the United States accounting for the largest share of Vietnam's exports in 2012).

speculative on this record. There is nothing in the record to suggest a plan or ability by such firms to shift production to wind towers in the event of revocation.[75]

Accordingly, based on all of the information in the record, including the consistent historical pattern of exports from Vietnam to date, ***, and the fact that CS Wind is now nonsubject, as well as the findings concerning the conditions of competition distinctive to this industry, I do not find it likely that the volume of subject imports from Vietnam would be significant, in absolute terms or relative to production or consumption in the United States, within a reasonably foreseeable time in the event of revocation.

B. Likely Price Effects

The record does not contain subject import pricing data for the original investigations or the period of review. To the extent that it contains pricing data for Vietnamese product, ***. Based on my conclusion that revocation of the order would not likely result in a significant volume of subject imports from Vietnam, I find that subject imports from Vietnam are unlikely to undersell the domestic like product significantly, or to depress or suppress domestic like product prices to a significant degree, within a reasonably foreseeable time after revocation.

C. Likely Impact

I have found that revocation of the order on Vietnam is unlikely to result in a significant volume of subject imports from Vietnam or significant price effects on the domestic industry after revocation. In the absence of a significant volume of imports or significant price effects, subject imports from Vietnam would not likely have a significant adverse impact on the domestic industry after revocation.

V. Conclusion

For the above-stated reasons, I determine that revocation of the antidumping and countervailing duty orders on wind towers from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. I further determine that revocation of the antidumping duty order on wind towers from Vietnam would not be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonable foreseeable time.

[75] *See* WTTC's Posthearing Br., Answers to Commissioners' Questions at 36.

PART I: INTRODUCTION

BACKGROUND

On January 2, 2018, the U.S. International Trade Commission ("Commission" or "USITC") gave notice, pursuant to section 751(c) of the Tariff Act of 1930, as amended ("the Act"),[1] that it had instituted reviews to determine whether revocation of the countervailing duty order on utility scale wind towers ("wind towers") from China and the antidumping duty orders on wind towers from China and Vietnam would likely lead to the continuation or recurrence of material injury to a domestic industry.[2] [3] On April 9, 2018, the Commission determined that it would conduct full reviews pursuant to section 751(c)(5) of the Act.[4] The following tabulation presents information relating to the background and schedule of this proceeding:[5] [6]

Effective date	Action
February 15, 2013	Commerce's countervailing and antidumping duty orders on wind towers from China and Vietnam (78 FR 11152, 78 FR 11146 and 78 FR 11150, February 15, 2013)
January 2, 2018	Commission's institution of five-year reviews (83 FR 142, January 2, 2018)
January 2, 2018	Commerce's initiation of five-year reviews (83 FR 100, January 2, 2018)
April 9, 2018	Commission's determinations to conduct full five-year reviews (83 FR 17446, April 19, 2018)

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

[2] *Utility Scale Wind Towers From China and Vietnam; Institution of Five-Year Reviews*, 83 FR 142, January 2, 2018. All interested parties were requested to respond to this notice by submitting the information requested by the Commission.

[3] In accordance with section 751(c) of the Act, the U.S. Department of Commerce ("Commerce") published a notice of initiation of five-year reviews of the subject antidumping and countervailing duty orders concurrently with the Commission's notice of institution. *Initiation of Five-Year (Sunset) Reviews*, 83 FR 100, January 2, 2018.

[4] *Utility Scale Wind Towers From China and Vietnam; Notice of Commission Determination To Conduct Full Five-Year Reviews,* 83 FR 17446, April 19, 2018. The Commission found that the domestic interested party group response to its notice of institution was adequate. The Commission found that the respondent interested party group responses were inadequate. The Commission also found that other circumstances warranted conducting full reviews.

[5] The Commission's notice of institution, notice to conduct full reviews, scheduling notice, and statement on adequacy are referenced in appendix A and may also be found at the Commission's web site (internet address *www.usitc.gov*). Commissioners' votes on whether to conduct expedited or full reviews may also be found at the web site. Information regarding the Commission's proposed hearing is contained in Appendix B.

[6] Due to the lapse in appropriations and ensuing cessation of Commission operations, the Commission revised its schedule of these reviews. *Utility Scale Wind Towers From China and Vietnam; Revised Schedule for Full Five-Year Reviews*, 84 FR 2926, February 8, 2019.

Effective date	Action
May 2, 2018	Commerce's final results of expedited five-year review of the antidumping duty orders (83 FR 19220, May 2, 2018)
May 17, 2018	Commerce's final results of expedited five-year review of the countervailing duty order (83 FR 22960, May 17, 2018)
September 14, 2018	Commission's scheduling of the reviews (83 FR 46516, September 13, 2018)
February 4, 2019	Commission's revised scheduling of the reviews due to lapse in appropriations (84 FR 2926, February 8, 2019)
February 28, 2019	Commission's hearing, subsequently cancelled[7]
April 9, 2019	Commission's vote
May 2, 2019	Commission's determinations and views

The original investigations

The original investigations resulted from petitions filed on December 29, 2011 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. On December 24, 2012, Commerce determined that imports of wind towers from China and Vietnam were being sold at less than fair value ("LTFV") and were subsidized by the government of China.[8] 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.[9] [10] On February 15, 2013, Commerce issued its antidumping duty orders on wind

[7] *Utility Scale Wind Towers from China and Vietnam; Cancellation of Hearing for Full-Five Year Reviews*, 84 FR 7934, March 5, 2019.

[8] *Utility Scale Wind Towers From the People's Republic of China: Final Determination of Sales at Less Than Fair Value*, 77 FR 75992, December 26, 2012; *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Final Determination of Sales at Less Than Fair Value*, 77 FR 75984, December 26, 2012; *Utility Scale Wind Towers From the People's Republic of China: Final Affirmative Countervailing Duty Determination,* 77 FR 75978, December 26, 2012.

[9] *Utility Scale Wind Towers From China and Vietnam*, 78 FR 10210, February 13, 2013. Chairman Irving A. Williamson and Commissioner Shara L. Aranoff determined that an industry in the United States was materially injured by reason of imports of wind towers from China and Vietnam. Commissioner Dean A. Pinkert determined that an industry in the United States was threatened with material injury by reason of imports from China and Vietnam of wind towers. He further determined that he would not have found material injury but for the suspension of liquidation. Ibid.

[10] Siemens Energy, Inc. ("Siemens"), a U.S. importer of wind towers, challenged the Commission's determinations that the domestic industry was materially injured or threatened with material injury by reason of subject imports before the U.S. Court of International Trade ("CIT"). The CIT rejected Siemens's arguments and affirmed the Commission's determinations in all respects. *Siemens Energy, Inc. v. United States*, 992 F. Supp. 2d 315 (Ct. Int'l Trade 2014). Siemens subsequently appealed the decision

(*continued*...)

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.[11] Commerce also issued its countervailing duty order on wind towers from China with countervailable subsidy rates ranging from 21.86 percent to 34.81 percent.[12]

PREVIOUS AND RELATED INVESTIGATIONS

Wind towers have not been the subject of any prior related antidumping or countervailing duty investigations in the United States.

SUMMARY DATA

Table I-1 presents a summary of data from the original investigations and the current full five-year reviews. On March 26, 2017, Commerce published notice that merchandise produced and exported by CS Wind is excluded from the antidumping duty order on Vietnam.[13]

(…*continued*)
of the CIT to the U.S. Court of Appeals for the Federal Circuit. The Court of Appeals again rejected Siemens's challenges to the Commission's determinations and affirmed the CIT's decision. *Siemens Energy, Inc. v. United States*, 806 F.3d 1367 (Fed. Cir. 2015).

[11] *Utility Scale Wind Towers From the People's Republic of China: Antidumping Duty Order*, 78 FR 11146, February 15, 2013; *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Amended Final Determination of Sales at Less Than Fair Value and Antidumping Duty Order,* 78 FR 11150, February 15, 2013.

[12] *Utility Scale Wind Towers from the People's Republic of China: Countervailing Duty Order,* 78 FR 11152, February 15, 2013.

[13] *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 82 FR 15493, March 26, 2017. 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 AD 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. This determination is currently on appeal. See also *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 80 FR 30211, May 27, 2015; *Utility Scale Wind Towers from the Socialist Republic of Vietnam: Final Results of Antidumping Duty Administrative Review; 2013-2014*, 80 FR 55333, September 15, 2015; and *Commerce's Issues and Decision Memorandum for the Expedited First Sunset Reviews of the Antidumping Duty Orders on Utility Scale Wind Towers from the People's Republic of China and the Socialist Republic of Vietnam*, April 26, 2018, p. 5.

Table I-1
Wind towers: Comparative data from the original investigations and current reviews, 2011 and 2017

Item	Original investigations	First reviews
	2011	2017
	Quantity (units)	
U.S. consumption quantity	***	***
	Share of quantity (percent)	
Share of U.S. consumption: U.S. producers' share	***	***
U.S. importers' share: China	***	***
Vietnam subject[1]	***	***
Subject sources	***	***
Vietnam nonsubject	([2])	***
All other sources	([2])	***
Nonsubject sources	***	***
All import sources	***	***
	Value (1,000 dollars)	
U.S. consumption	***	***
	Share of value (percent)	
Share of U.S. consumption: U.S. producers' share	***	***
U.S. importers' share: China	***	***
Vietnam subject[1]	***	***
Subject sources	***	***
Vietnam nonsubject	([2])	***
All other sources	([2])	***
Nonsubject sources	***	***
All import sources	***	***

Table continued on next page.

Table I-1—Continued
Wind towers: Comparative data from the original investigations and current review, 2011 and 2017

Item	Original investigations	First reviews
	2011	2017
	Quantity (units); Value (1,000 dollars); and Unit Value (dollars per unit)	
U.S. imports.--		
China		
Quantity	***	***
Value	***	***
Unit value	***	***
U.S. imports.--		
Vietnam subject[1]		
Quantity	***	***
Value	***	***
Unit value	***	***
U.S. imports.--		
Subject sources		
Quantity	***	***
Value	***	***
Unit value	***	***
U.S. imports.--		
Vietnam nonsubject		
Quantity	([2])	***
Value	([2])	***
Unit value	([2])	***
All other sources:		
Quantity	([2])	***
Value	([2])	***
Unit value	([2])	***
Nonsubject sources:		
Quantity	***	***
Value	***	***
Unit value	***	***
All import sources:		
Quantity	***	***
Value	***	***
Unit value	***	***

Table continued on next page.

Table I-1—Continued
Wind towers: Comparative data from the original investigations and current review, 2011 and 2017

Item	Original investigation	First review
	2011	2017
	Quantity (units); Value (1,000 dollars); and Unit Value (dollars per unit)	
U.S. industry:		
Capacity (quantity)	***	***
Production (quantity)	***	***
Capacity utilization (percent)	***	***
U.S. shipments:		
Quantity	***	***
Value	***	***
Unit value	***	***
Ending inventory	***	***
Inventories/total shipments	***	***
Production workers	***	***
Hours worked (1,000)	***	***
Wages paid (1,000 dollars)	***	***
Hourly wages	***	***
Productivity (units per 1,000 hours)	***	***
Financial data:		
Net sales:		
Quantity	***	***
Value	***	***
Unit value	***	***
Cost of goods sold	***	***
Gross profit or (loss)	***	***
SG&A expense	***	***
Operating income or (loss)	***	***
Unit COGS	***	***
Unit operating income	***	***
COGS/Sales (percent)	***	***
Operating income or (loss)/ Sales (percent)	***	***

[1] On March 26, 2017, Commerce published notice that merchandise produced and exported by CS Wind is excluded from the antidumping duty order on Vietnam. *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 82 FR 15493, March 26, 2017.

[2] Vietnam did not have any nonsubject companies at this time.

Source: For the year 2011, data are compiled using data submitted in the Commission's original investigations, Final Staff Report INV-LL-002, January 7, 2013. For the year 2017, data are compiled using data provided in response to Commission questionnaires.

STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

Statutory criteria

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

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

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

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

> *(A) there is likely to be significant price underselling by imports of the subject merchandise as compared to domestic like products, and*
> *(B) imports of the subject merchandise are likely to enter the United States at prices that otherwise would have a significant depressing or suppressing effect on the price of domestic like products.*

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

> *(A) likely declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity,*
> *(B) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, and*
> *(C) likely negative effects on the existing development and production efforts of the industry, including efforts to develop a derivative or more advanced version of the domestic like product.*

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

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

Organization of report

Information obtained during the course of the reviews that relates to the statutory criteria is presented throughout this report. A summary of trade and financial data for wind towers as collected in the reviews is presented in appendix C. U.S. industry data are based on the questionnaire responses of seven U.S. producers of wind towers that are believed to have accounted for all domestic production of wind towers in 2017. U.S. import data and related information are based on the questionnaire responses of six U.S. importers of wind towers that are believed to have accounted for all subject U.S. imports during 2017. Foreign industry data and related information are based on public information and Global Trade Atlas. No foreign producer of wind towers submitted a response to the Commission's questionnaire. Responses

by U.S. producers, importers, and purchasers of wind towers to a series of questions concerning the significance of the existing antidumping and countervailing duty orders and the likely effects of revocation of such orders are presented in appendix D.

COMMERCE'S REVIEWS[14]

Administrative reviews

Commerce has completed one administrative review and one new shipper review of the outstanding antidumping duty order on wind towers from Vietnam.[15] Commerce has not completed any administrative reviews of the outstanding countervailing and antidumping duty orders on wind towers from China. On September 15, 2015, consistent with its preliminary determination, Commerce continued to find that CS Wind Group has not sold subject merchandise in the United States at below normal value during February 13, 2013 through January 31, 2014, and assigned a weighted average dumping margin of 0.00 percent (de minimis).[16] [17] On March 14, 2018, consistent with its preliminary determination, Commerce continued to find that CS Wind Group did not have any shipments of subject merchandise from Vietnam during February 1, 2016 through January 31, 2017.[18]

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[14] Commerce has not conducted any changed circumstances reviews, critical circumstances reviews, or issued anti-circumvention findings, since the completion of the original investigations. In addition, Commerce has not issued any duty absorption findings or any company revocations or scope rulings since the imposition of the orders.

[15] For previously reviewed or investigated companies not included in an administrative review, the cash deposit rate continues to be the company-specific rate published for the most recent period.

[16] *Utility Scale Wind Towers From the Socialist Republic Vietnam: Final Results of Antidumping Duty Administrative Review; 2013-2014*, 80 FR 55333, September 15, 2015. See also *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Preliminary Results of Antidumping Duty Administrative Review*; *2013-2014*, 80 FR 12449, March 9, 2015.

[17] As a result of litigation at the Court of Appeals for the Federal Circuit, subsequent to Commerce's administrative review, Commerce excluded merchandise that is produced and exported by CS Wind Group from the antidumping duty order on Vietnam. This determination is currently on appeal. See *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 82 FR 15493, March 26, 2017 and *Commerce's Issues and Decision Memorandum for the Expedited First Sunset Reviews of the Antidumping Duty Orders on Utility Scale Wind Towers from the People's Republic of China and the Socialist Republic of Vietnam*, April 26, 2018, p. 5.

[18] *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Final Determination of No Shipments; Antidumping Duty Administrative Review; 2016-2017*, 83 FR 11172, March 14, 2018. See also *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Preliminary Determination of No Shipments, and Preliminary Partial Rescission of Antidumping Duty Administrative Review; 2016-2017*, 82 FR 51386, November 6, 2017.

Five-year reviews

Commerce has issued the final results of its expedited reviews with respect to all subject countries.[19] Tables I-2 through I-4 present the countervailable subsidy and dumping margins calculated by Commerce in its original investigations and first reviews.

Table I-2
Wind towers: Commerce's original and first five-year countervailable subsidy margins for producers/exporters in China

Producer/exporter	Original margin (percent)	First five-year review margin (percent)
CS Wind China Co., Ltd., CS Wind Tech (Shanghai) Co., Ltd., and CS Wind Corporation (collectively, CS Wind)	21.86	21.86
Titan Wind Energy (Suzhou) Co. Ltd. (Titan Wind), Titan Lianyungang Metal Product Co. Ltd. (Titan Lianyungang), Baotou Titan Wind Power Equipment Co., Ltd. (Titan Baotou), and Shenyang Titan Metal Co., Ltd. (Titan Shenyang) (collectively, Titan Companies)	34.81	34.81
All others	28.34	28.34

Source: *Utility Scale Wind Towers from the People's Republic of China: Countervailing Duty Order*, 78 FR 11152, February 15, 2013; and *Utility Scale Wind Towers From the People's Republic of China: Final Results of the Expedited First Sunset Review of the Countervailing Duty Order*, 83 FR 22960, May 17, 2018.

[19] *Utility Scale Wind Towers From the People's Republic of China: Final Results of the Expedited First Sunset Review of the Countervailing Duty Order*, 83 FR 22960, May 17, 2018; and *Utility Scale Wind Towers From the People's Republic of China and the Socialist Republic of Vietnam: Final Results of Expedited First Sunset Reviews of Antidumping Duty Orders*, 83 FR 19220, May 2, 2018.

Table I-3
Wind towers: Commerce's original and first five-year dumping margins for producers/exporters in China

Producer/exporter	Original margin (percent)	Amended margin[1] (percent)	First five-year review margin (percent)
Chengxi Shipyard Co., Ltd.	47.59	36.98	--
Titan (Lianyungang) Metal Product Co., Ltd. / Titan Wind Energy (Suzhou) Co., Ltd.	44.99	34.33	--
Titan Wind Energy (Suzhou) Co., Ltd.	44.99	34.33	--
CS Wind China Co., Ltd. / CS Wind Corporation	46.38	35.81	--
Guodian United Power Technology Baoding Co., Ltd.	46.38	35.77	--
Qiangsheng Wind Equipment Co., Ltd. / Sinovel Wind Group Co., Ltd.	46.38	35.77	--
China-Wide Entity[2]	70.63	60.02	Up to 60.02

[1] The weighted-average dumping margins were adjusted pursuant to a proceeding under section 129 of the Uruguay Round Agreements Act. Unless the applicable cash deposit rate has been superseded by intervening administrative reviews, Commerce will instruct U.S. Customs and Border Protection to require a cash deposit for estimated ADs at the appropriate rate for each exporter/producer specified above, for entries of subject merchandise, entered or withdrawn from warehouse, for consumption, on or after August 4, 2015.
[2] China-wide entity includes AVIC International Renewable Energy Co., Ltd.

Source: *Utility Scale Wind Towers From the People's Republic of China: Antidumping Duty Order*, 78 FR 11146, February 15, 2013; *Implementation of Determinations Under Section 129 of the Uruguay Round Agreements Act: Citric Acid and Citrate Salts From the People's Republic of China; Certain Coated Paper Suitable for High-Quality Print Graphics Using Sheet-Fed Presses From the People's Republic of China; Seamless Carbon and Alloy Steel Standard, Line, and Pressure Pipe From the People's Republic of China; High Pressure Steel Cylinders From the People's Republic of China; Multilayered Wood Flooring From the People's Republic of China; Certain Crystalline Silicon Photovoltaic Cells, Whether or Not Assembled Into Modules, From the People's Republic of China; Utility Scale Wind Towers From the People's Republic of China*, 80 FR 48812, August 14, 2015; and *Utility Scale Wind Towers From the People's Republic of China and the Socialist Republic of Vietnam: Final Results of Expedited First Sunset Reviews of Antidumping Duty Orders*, 83 FR 19220, May 2, 2018.

Table I-4
Wind towers: Commerce's original and first five-year dumping margins for producers/exporters in Vietnam

Producer/exporter	Original margin (percent)	First five-year review margin (percent)
The CS Wind Group[1]	58.54 → 17.02 → 0.00[2]	--
Vietnam-Wide Entity[3]	58.54	Up to 58.54

[1] The CS Wind Group consists of CS Wind Vietnam Co., Ltd. and CS Wind Corporation.
[2] 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 AD 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. This determination is currently on appeal. See *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 82 FR 15493, March 26, 2017; *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 80 FR 30211, May 27, 2015; *Utility Scale Wind Towers from the Socialist Republic of Vietnam: Final Results of Antidumping Duty Administrative Review; 2013-2014*, 80 FR 55333, September 15, 2015; and *Commerce's Issues and Decision Memorandum for the Expedited First Sunset Reviews of the Antidumping Duty Orders on Utility Scale Wind Towers from the People's Republic of China and the Socialist Republic of Vietnam*, April 26, 2018, p. 5.
[3] The Vietnam-Wide Entity includes Vina-Halla Heavy Industries, Ltd.

Source: *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Amended Final Determination of Sales at Less Than Fair Value and Antidumping Duty Order*, 78 FR 11150, February 15, 2013; *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 82 FR 15493, March 29, 2017; and *Utility Scale Wind Towers From the People's Republic of China and the Socialist Republic of Vietnam: Final Results of Expedited First Sunset Reviews of Antidumping Duty Orders*, 83 FR 19220, May 2, 2018.

THE SUBJECT MERCHANDISE

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[20]
The merchandise covered by these orders is certain wind towers, whether or not tapered, and sections thereof. Certain wind towers are 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 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 roto 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. Merchandise covered by the orders is currently classified in the Harmonized Tariff System of the United States (HTSUS) under subheadings 7308.20.0020[21] or 8502.31.0000.[22] Prior to 2011, merchandise covered by this review was classified in the HTSUS under subheading 7308.20.0000 and may continue to be to some degree. While HTSUS subheadings are provided for convenience and customs purposes, the written description of the subject merchandise is dispositive.

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[20] *Utility Scale Wind Towers From the People's Republic of China and the Socialist Republic of Vietnam: Final Results of Expedited First Sunset Reviews of Antidumping Duty Orders,* 83 FR 19220, May 2, 2018.

[21] Wind towers of iron or steel are classified under HTSUS 7308.20.0020 when imported separately as a tower or tower section(s).

[22] Wind towers may also be classified under HTSUS 8502.31.0000 when imported as combination goods with a wind turbine (i.e., accompanying nacelles and/or rotor blades).

Tariff treatment

Merchandise subject to these reviews is imported under the statistical reporting numbers 7308.20.0020 or 8502.31.0000 of the Harmonized Tariff Schedule of the United States ("HTS").[23] HTS subheading 7308.20.00 has a general duty rate of free, and 8502.31.00 has a general rate of 2.5 percent ad valorem.[24] Products of China are subject to an additional duty of 25 percent ad valorem when classified in subheading 7308.20.00 (see heading 9903.88.02) or 8502.31.00 (see heading 9903.88.01). Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Section 232 investigation (Commerce)

On April 19, 2017, Commerce initiated an investigation under section 232 of the Trade Expansion Act of 1962 as amended (19 U.S.C. 1862), to assess the impact of steel imports on the national security of the United States.[25] [26] Commerce submitted the results of the investigations to the President on January 11, 2018.[27] Commerce recommended the following:

- A global tariff of at least 24 percent on all steel imports from all countries, or
- A tariff of at least 53 percent on all steel imports from 12 countries (Brazil, China, Costa Rica, Egypt, India, Malaysia, Republic of Korea, Russia, South Africa, Thailand, Turkey and Vietnam) with a quota by product on steel imports from all other countries equal to 100 percent of their 2017 exports to the United States, or
- A quota on all steel products from all countries equal to 63 percent of each country's 2017 exports to the United States.[28]

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[23] Prior to 2011, subject goods were imported under statistical reporting number 7308.20.0000. Wind towers are classified under statistical reporting number 7308.20.0020 when imported as a tower or tower section(s) alone. Wind towers imported as part of a wind turbine with an appropriate number of nacelles and rotor blades are believed to be imported under subheading 8502.31.00, which covers wind-powered electric generating sets. Both statistical reporting numbers include products other than wind turbine towers.

[24] The product description, and not the HTSUS classification, is dispositive of whether the merchandise imported into the United States is included in the scope of the reviews.

[25] U.S. Department of Commerce website: https://www.commerce.gov/news/press-releases/2018/01/statement-department-commerce-submission-steel-section-232-report, retrieved December 11, 2018.

[26] Section 232 of the Trade Expansion Act of 1962 (19 U.S.C. §1862) authorizes the Secretary of Commerce to conduct these investigations.

[27] U.S. Department of Commerce website: https://www.commerce.gov/news/pressreleases/2018/01/statement-department-commerce-submission-steel-section-232-report, retrieved December 11, 2018.

[28] U.S. Department of Commerce website: https://www.commerce.gov/news/press-releases/2018/02/secretary-ross-releases-steel-and-aluminum-232-reports-coordination, retrieved December 11, 2018.

On March 8, 2018, the President announced his decision to impose 25 percent ad valorem duties on all steel mill products from all U.S. trading partners, except Canada and Mexico.[29] [30] On March 22, 2018, the President authorized the suspension of tariffs on steel and aluminum imports from the following countries: Argentina, Australia, Brazil, Canada, Mexico, member countries of the European Union, and South Korea.[31] On April 30, 2018, the President announced the expiration of exemptions on tariffs on steel and aluminum imports from Canada, the European Union member states, and Mexico would occur on May 31, 2018.[32] The President also announced the exemptions were extended permanently for South Korea in return for agreeing to product-specific quotas beginning on January 1, 2019.[33] Exemptions for Argentina, Australia, and Brazil were also extended until alternative means could be finalized.[34]

On May 31, 2018, under a Presidential Proclamation issued under Section 232 of the Trade Expansion Act of 1962, the President announced tariffs will no longer be suspended for steel and aluminum imports from Mexico, Canada, and the European Union, effective June 1, 2018. Steel products from these countries are subject to a 25 percent ad valorem duty.[35]

A subsequent Presidential proclamation established absolute quotas for Argentina, Brazil, and Korea as an alternate to the 25 percent ad valorem duty for imports of steel mill articles, effective June 1, 2018 (leaving Australia as the only country exempt from both the tariff and quota).[36] [37] On August 10, 2018, the President authorized adjusting the ad valorem tariff on steel imports from Turkey from 25 percent to 50 percent (table I-5).[38]

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[29] *Presidential Proclamation 9705 of March 8, 2018, Adjusting Imports of Steel Into the United States*, 83 FR 11625, December 11, 2018.

[30] For the purposes of this proclamation, "steel articles" are defined at the Harmonized Tariff Schedule (HTS) six-digit level as: 7206.10 through 7216.50, 7216.99 through 7301.10, 7302.10, 7302.40 through 7302.90, and 7304.10 through 7306.90, including any subsequent revisions to these HTS classifications.

[31] *Presidential Proclamation 9711 of March 22, 2018*, *Adjusting Imports of Steel Into the United States*, 83 FR 13361, December 11, 2018.

[32] *Presidential Proclamation 9740 of April 30, 2018, Adjusting Imports of Steel Into the United States*, 83 FR 20683, December 11, 2018.

[33] *Presidential Proclamation 9740 of April 30, 2018, Adjusting Imports of Steel Into the United States*, 83 FR 20683, December 11, 2018.

[34] *Presidential Proclamation 9740 of April 30, 2018, Adjusting Imports of Steel Into the United States*, 83 FR 20683, December 11, 2018.

[35] *Presidential Proclamation 9759 of May 31, 2018, Adjusting Imports of Steel into the United States*, 83 FR 25857, June 5, 2018.

[36] U.S. Customs and Border Protection, "QB 18-126 Absolute Quotas for Steel Mill Articles: Argentina, Brazil and South Korea," https://www.cbp.gov/trade/quota/bulletins/qb-18-126-absolute-quota-aluminum-products-argentina-brazil-south-korea, retrieved December 11, 2018.

[37] U.S. Customs and Border Protection, "Section 232 Tariffs on Aluminum and Steel," https://www.cbp.gov/trade/programs-administration/entry-summary/232-tariffs-aluminum-and-steel, retrieved December 11, 2018.

[38] Presidential Proclamation 9772 of August 10, 2018, Adjusting Imports of Steel Into the United States, 83 FR 40429, August 15, 2018.

Table I-5
Wind towers: Section 232 tariffs summary

Country	Effective date	Ad valorem duty rate	Absolute quotas
Argentina	June 1, 2018	Exempt	Yes
Australia	Exempt	Exempt	Exempt
Brazil	June 1, 2018	Exempt	Yes
Canada	June 1, 2018	25%	N/A
European Union	June 1, 2018	25%	N/A
Mexico	June 1, 2018	25%	N/A
Korea	May 1, 2018	Exempt	Yes
Turkey	August 13, 2018	50%	N/A
All other countries	March 23, 2018	25%	N/A

Source: U.S. Customs and Border Patrol website: https://www.cbp.gov/trade/programs-administration/entry-summary/232-tariffs-aluminum-and-steel, retrieved November 29, 2018.

In the President's proclamation establishing the tariff under Section 232, the Secretary of Commerce was authorized to provide relief from the 25 percent ad valorem duties for any steel articles determined "not to be produced in the United States in a sufficient and reasonably available amount or of a satisfactory quality and is also authorized to provide such relief based upon specific national security considerations. Such relief shall be provided for any article only after a request for exclusion is made by a directly affected party located in the United States.[39] Approved exclusions are made on a product basis and are limited to the individual or organization that submitted the specific exclusion request, unless Commerce approves a broader application of the product based exclusion request to apply to additional importers.[40]

On June 20, 2018, Commerce announced its first set of product exclusions granted from Section 232 tariffs on steel imports. Forty-two exclusion requests were granted, covering seven companies importing steel products from Japan, Sweden, Belgium, Germany, and China. The seven companies receiving the exclusions are: Schick Manufacturing, Inc. of Shelton, Connecticut; Nachi America Inc. of Greenwood, Indiana; Hankev International of Buena Park, California; Zapp Precision Wire of Summerville, South Carolina; U.S. Leakless, Inc. of Athens, Alabama; Woodings Industrial Corporation of Mars, Pennsylvania; and PolyVision Corporation of Atlanta, Georgia.[41] The exempted products were not specified.Wind towers (HTS

[39] *U.S. Department of Commerce, Bureau of Industry and Security, "Section 232 National Security Investigation of Steel Imports Information on the Exclusion and Objection Process,"* https://www.bis.doc.gov/index.php/232-steel, retrieved December 11, 2018.

[40] *Requirements for Submissions Requesting Exclusions from the Remedies Instituted in Presidential Proclamations Adjusting Imports of Steel into the United States and Adjusting Imports of Aluminum into the United States; and the Filing Objections to Submitted Exclusion request for Steel and Aluminum,* 83 FR 12106, March 19, 2018.

[41] U.S. Department of Commerce, "Department of Commerce Grants First Product Exclusion Requests from Section 232 Tariffs on Steel Imports," https://www.commerce.gov/news/press-

(*continued*...)

subheadings 7308.20.00 or 8502.31.00), steel plate specifically designed to be formed into wind tower sections (HTS subheading 7308.90.95), and other steel wind tower parts (HS 7308) were not included in the enumeration of iron and steel articles subject to the additional 25 percent ad valorem national-security duties under Section 232 of the *Trade Expansion Act of 1962*, as amended.[42]

Section 301 proceeding

Section 301 of the Trade Act of 1974, as amended ("Trade Act"),[43] authorizes the USTR, at the direction of the President, to take appropriate action to respond to a foreign country's unfair trade practices. On August 18, 2017, the USTR initiated an investigation into certain acts, policies, and practices of the Government of China related to technology transfer, intellectual property, and innovation.[44] On April 6, 2018, the USTR published its determination that the acts, policies, and practices of China under investigation are unreasonable or discriminatory and burden or restrict U.S. commerce, and are thus actionable under section 301(b) of the Trade Act.[45] The USTR further determined that it was appropriate and feasible to take action and proposed the imposition of an additional 25 percent ad valorem duty on products of China with an annual trade value of approximately $50 billion. The additional duties were initially proposed in two tranches. Tranche 1 covered 818 tariff subheadings, with an approximate annual trade value of $34 billion.[46] [47] Tranche 2 covered 279 tariff subheadings, with an approximate annual trade value of $16 billion.[48]

Wind towers, which are reported under statistical reporting number 7308.20.0020 when imported as a tower or tower section(s) alone, were included in the list of articles subject to the

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(…*continued*)
releases/2018/06/department-commerce-grants-first-product-exclusion-requests-section-232, retrieved December 11, 2018.

[42] *Adjusting Imports of Steel Into the United States*, Presidential Proclamation 9705, March 8, 2018, 83 FR 11625, March 15, 2018.

[43] 19 U.S.C. § 2411.

[44] *Initiation of Section 301 Investigation; Hearing; and Request for Public Comments: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 82 FR 40213, August 24, 2017.

[45] *Notice of Determination and Request for Public Comment Concerning Proposed Determination of Action Pursuant to Section 301: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 FR 14906, April 6, 2018.

[46] *Notice of Action and Request for Public Comment Concerning Proposed Determination of Action Pursuant to Section 301: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 FR 28710, June 20, 2018.

[47] Relevant HTS codes for utility scale wind towers in the Tranche 1 list include the following: 8502.31.00. *Notice of Action Pursuant to Section 301: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 FR 28710, June 20, 2018.

[48] Relevant HTS codes for utility scale wind towers in the Tranche 2 list include the following: 7308.20.00. *Notice of Action Pursuant to Section 301: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 FR 40823, August 16, 2018.

additional 25-percent ad valorem duty effective August 23, 2018, under section 301 of the Trade Act of 1974. Wind towers imported as part of a wind turbine with an appropriate number of nacelles and rotor blades are believed to be imported under subheading 8502.31.00, which covers wind-powered electric generating sets, were included in the list of articles subject to the additional 25 percent ad valorem duty effective July 6, 2018, under section 301 of the Trade Act of 1974.[49] See U.S. notes 20(e) and 20(f), subchapter III of chapter 99 which discuses articles and products from China.[50]

THE PRODUCT

Description and uses[51]

Wind turbines consist of three main components--the nacelle, rotor, and tower. The nacelle houses the wind turbine's main power generation components (i.e., the gearbox, generator, and other components), while the rotor typically consists of three blades and the hub (figure I-1). The nacelle sits on top of a tower, which is typically a tubular steel tower for utility-scale wind turbines.

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

[50] *HTSUS (2018) Revision 13*, USITC Publication No. 4832, October 2018, pp. 99-III-21 - 99-III-22, 99-III-60 - 99-III-62.

[51] Unless otherwise noted, this information is based on *Utility Scale Wind Towers from China and Vietnam, Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final),* USITC Publication 4372, February 2013, pp. I-7–I-12. Credits for pictures were retained.

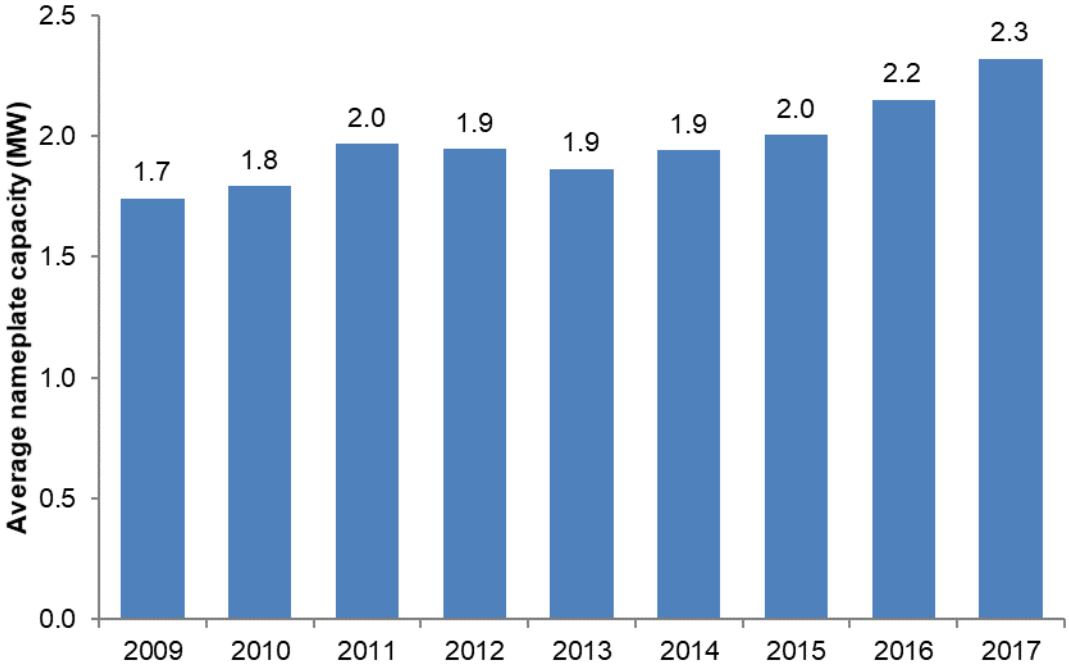
Figure I-1
Wind towers: Utility-scale wind turbine

Source: Photo courtesy of DOE/NREL, credit: Dennis Schroeder.

Wind turbines convert the energy from wind to electrical energy. 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 considered to be those with a capacity of more than 100 kW, according to petitioners in the original investigations. Utility-scale wind turbine sizes have increased over time, with the average capacity of a wind turbine installed in the United States increasing from 1.74 MW in 2009 to 2.3 MW in 2017 (figure I-2).[52]

[52] Wiser, Ryan and Mark Bolinger, 2016 *Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, data file, https://emp.lbl.gov/wind-technologies-market-report.

Figure I-2
Wind towers: Average nameplate capacity of wind turbines installed in the United States, 2009–17



Source: Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2018, data file, https://emp.lbl.gov/wind-technologies-market-report.

Wind turbines can be installed individually or as part of a larger wind project (also known as a wind farm). Installations of one to two turbines are often, but not exclusively, for on-site use by entities such as towns and universities. Installations of wind turbines for utilities and independent power producers[53] can be a single turbine, but more commonly range from several turbines to more than 100. Wind projects and wind turbines, including towers, have a life expectancy of at least 20 years. The first offshore wind installation in the United States was completed in December 2016.[54]

Utility-scale wind turbines generally use tubular steel towers that consist of multiple sections placed on a foundation and assembled at the project site, with the complete tower height generally ranging from 60 meters to more than 100 meters (197 feet to more than 328 feet), as measured from the base of the tower to the hub ("hub height") (figure I-3). The base of the tower can be up to 4.5 meters (15 feet) in diameter, but varies with tower size. Smaller towers tend to have a smaller diameter base. The tower typically is tapered so that the

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

[54] Deepwater Wind Website, http://dwwind.com/project/block-island-wind-farm/, retrieved February 7, 2018.

diameter at the top is smaller than the diameter at the base. The tower comprises about two-thirds of the 200- to 400-short ton weight of the complete turbine, with steel comprising 98 percent of the tower weight (including the foundation). At the base of the tower is a door that allows entry to the tower, inside of which are tower internals such as platforms, ladders, lighting, lifts, and cabling.

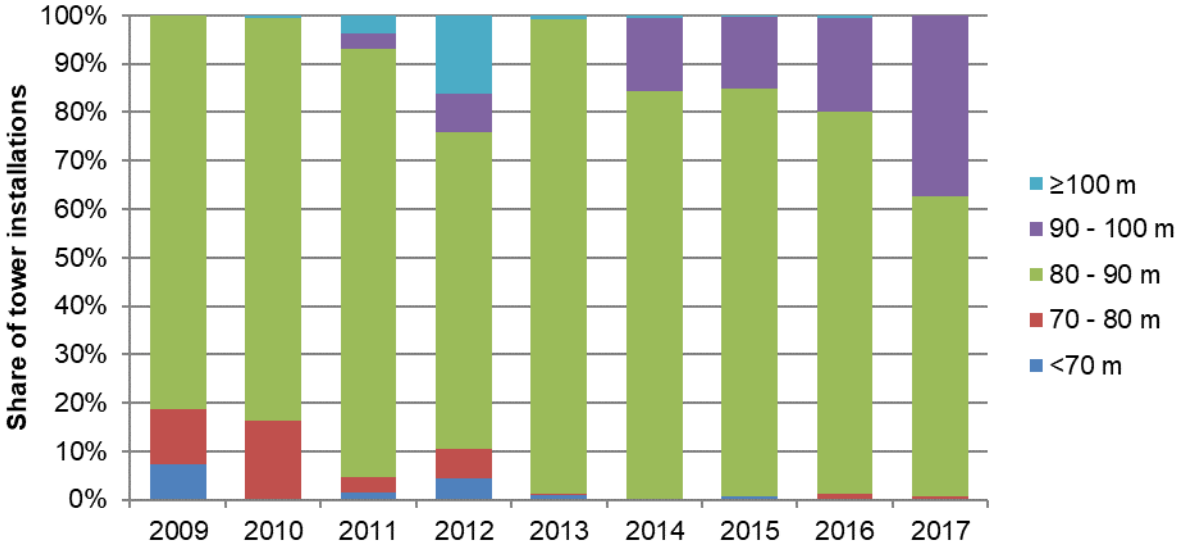
Figure I-3
Wind towers: Installed wind turbines

Source: Courtesy DOE/NREL, credit Iberdrola Renewables.

The average hub height of wind towers installed in the United States increased from 79 meters (259 feet) in 2009 to 86 meters (282 feet) in 2017. Towers 80 to 90 meters in height accounted for most of the market during this time period. However, the share of the market accounted for by towers less than 80 meters declined, while the share of 90 to 100 meter towers substantially increased (figure I-4).[55] Taller towers offer advantages because they allow the use of longer blades and access to better wind resources at higher altitudes.

[55] Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2018, data file, https://emp.lbl.gov/wind-technologies-market-report.

Figure I-4
Wind towers: Share of U.S. market by tower height, 2009–17



Note.-- m=meters.

Source: Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2018, data file, https://emp.lbl.gov/wind-technologies-market-report.

While tubular steel towers are the most common design for utility-scale wind turbines, other tower technologies are being used or are under development, often as a result of the increasing size of wind turbines. These include concrete and space frame towers (lattice towers with five legs covered with an architectural fabric).

Manufacturing processes[56]

Wind towers are produced to the specifications of each individual original equipment manufacturer ("OEM"), and each OEM typically has multiple tower designs. The wind turbine model and characteristics of the project site dictate which tower design will be used in a particular wind project.

Wind towers are made from discrete steel plate, which is purchased by the tower manufacturer and is typically 3 meters (10 feet) wide, 12 meters (40 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 OEMs (who are generally the tower purchasers) using lighter

[56] Unless otherwise noted, this information is based on *Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final): Utility Scale Wind Towers from China and Vietnam —Staff Report*, INV-LL-002, January 7, 2013, pp. I-15—I-20. Credits for pictures were retained.

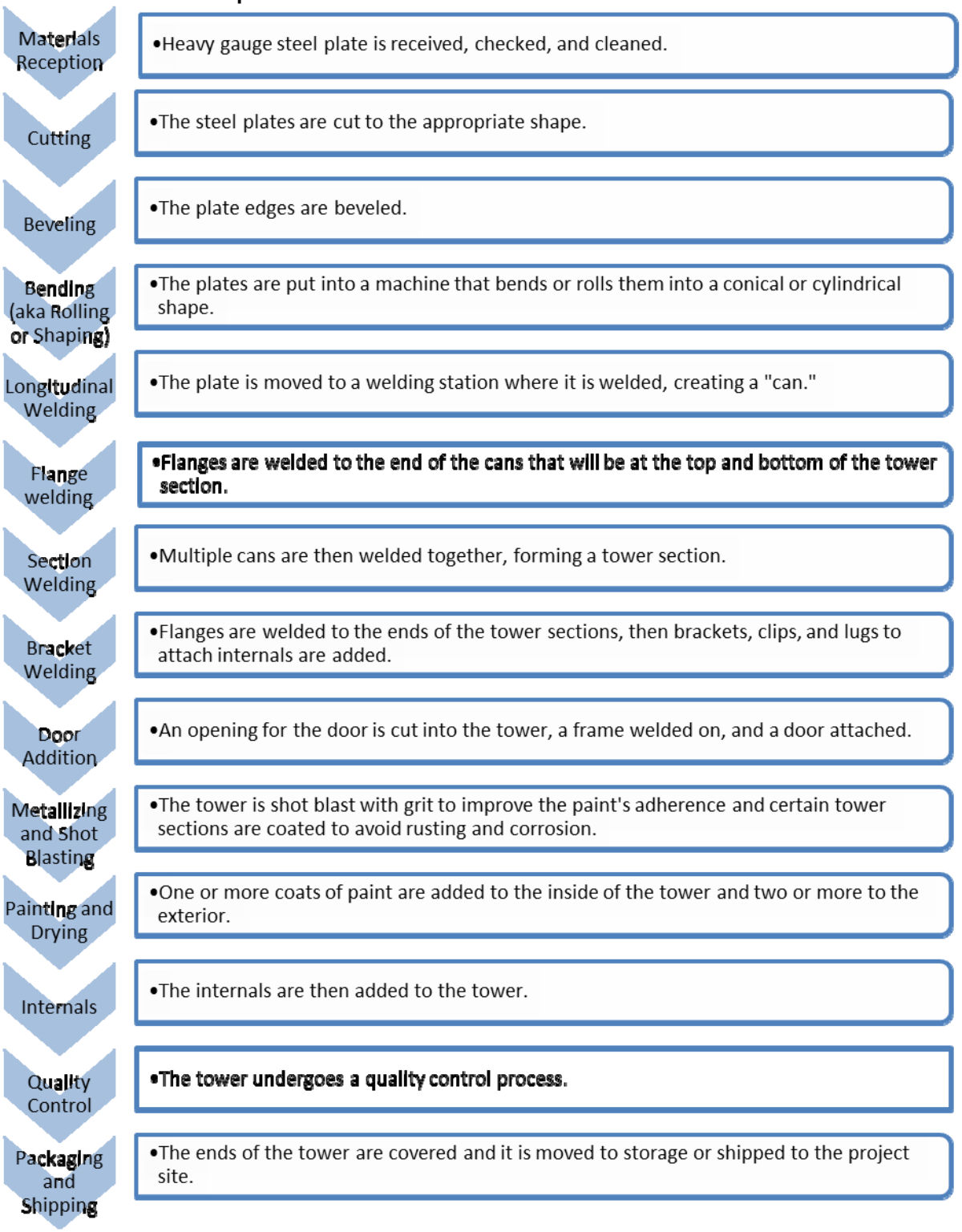
towers. The plate used at the base of the tower is the thickest and becomes thinner from the base to the top. ***.

***. The plate is typically made either to a U.S. specification (such as A36, A572-50, or A709 Grades 36 and 50) or a European specification (such as 10025 Grades S235, S275, and S355). ***.

In the first step in the production process, steel plate is received, checked for quality, and cleaned (figure I-5). A plasma and/or oxygen acetylene cutter is used to shape each plate, and then the edges of the plate are beveled.

The plate is then moved to a roller, which will form it into a cylindrical or conical shape. The longitudinal seam of the rolled plate is then welded, creating what is known as a can. A typical tower consists of 30 to 40 cans. ***. The quality of the weld is checked through ultrasonic testing. ***. A flange (through which bolts can be inserted during tower assembly) is then welded onto the cans that will be at the top and bottom of each tower section.

Figure I-5
Wind towers: Production process



Source: *Utility Scale Wind Towers from China and Vietnam, Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. I-14.

The individual cans are then welded together, creating a tower section. The tower sections vary in length and depend on the height of the tower and number of sections.[57] The welds are again checked, and brackets, clips, and lugs to which internals can be attached are welded to the interior of the tower. A door is added to the base section by cutting an opening for the door, welding a frame to the tower, and attaching the door. ***.

The tower sections are next blasted with grit to eliminate debris and create a rough surface that improves paint adherence. Portions of the tower surface may next be metalized[58] to reduce rust and corrosion. Towers are then painted with one or more layers on the interior and two or more layers on the exterior. It takes about 12 hours to paint and cure a tower section. The internals are then added and the tower undergoes a quality control process.

The end of each tower section is covered with a tarp, and then moved to the storage area. Shipment of the towers to the wind project site is usually handled by the customer. ***. Towers are usually shipped from U.S. producers' plants by either rail or truck (figure I-6), though barges can also be used to ship towers.[59] ***.

Figure I-6
Wind towers: Shipment by truck

Source: Photo courtesy of DOE/NREL, credit Jim Green.

[57] A taller tower does not necessarily require longer sections as the section lengths for an 80-meter tower that uses three sections can be longer than a 100-meter tower that uses five sections. However, a 100-meter tower will be substantially heavier overall.

[58] Metalizing is "a thermal spray process that involves vaporizing zinc and aluminum alloy wire to impinge it upon the blasted profile steel surface." *Utility Scale Wind Towers from China and Vietnam, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. I-13.

[59] Some of the largest tower sections may be too large to be shipped by rail and need to be shipped by truck.

At the project site, the base section of the tower is lifted by a crane and lowered straight down onto the foundation,[60] going over a power unit that sits in the base of the tower (figure I-7). The flange at the base of the tower is attached to the foundation, then the next section of the tower is added and the flanges at each end of the tower sections are bolted together with large structural nuts and bolts. Once all sections of the tower are constructed, the nacelle is added and then the rotor attached to the nacelle.

Figure I-7
Wind towers: Turbine installation

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

[60] ***.

DOMESTIC LIKE PRODUCT ISSUES

In the original investigations, Siemens argued that wind towers produced for its turbines were unique and should be a separate like product.[61] The Commission determined that there were no significant differences between the physical characteristics, uses, and methods of production of the wind towers that Siemens purchases and those of the wind towers that other original equipment manufacturers ("OEMs") purchase. Consequently, the Commission determined that all wind towers within the scope of the investigations constitute a single domestic like product.[62] In its notice of institution in these current five-year reviews, the Commission solicited comments from interested parties regarding the appropriate domestic like product and domestic industry.[63] In its response to the notice of institution, the domestic interested party agreed with the Commission's definition of the domestic like product as stated in the original investigations.[64] No party requested that the Commission collect data concerning other possible domestic like products in their comments on the Commission's draft questionnaires.[65] In its prehearing brief, counsel for WTTC stated that the Commission should define the domestic like product co-extensive with the scope of these reviews and a single domestic industry, the domestic industry that produces wind towers, consistent with its decision in the original investigations.[66] No other interested party provided further comment on the domestic like product.

U.S. MARKET PARTICIPANTS

U.S. producers

During the final phase of the original investigations, the Commission received U.S. producer questionnaires from six firms, which accounted for a substantial majority of production of wind towers in the United States during 2011.[67]

In these current proceedings, the Commission issued U.S. producers' questionnaires to seven firms, all of which provided the Commission with information on their product operations. These firms are believed to account for all U.S. production of wind towers in 2017. Presented in table I-6 is a list of current domestic producers of product and each company's

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[61] *Utility Scale Wind Towers from China and Vietnam, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. 6.

[62] Ibid.

[63] *Utility Scale Wind Towers From China and Vietnam; Institution of a Five-Year Review*, 83 FR 142, January 2, 2018.

[64] *Domestic interested party's response to the notice of institution*, February 1, 2018, p. 17.

[65] See *Petitioners' comments on draft questionnaires*, September 12, 2018.

[66] *Domestic interested party's prehearing brief*, February 14, 2019, pp. 6-7.

[67] *Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final): Utility Scale Wind Towers from China and Vietnam—Staff Report*, INV-LL-002, January 7, 2013, p. III-6.

position on continuation of the orders, production locations, and share of reported production of wind towers in 2017.

Table I-6
Wind towers: U.S. producers, positions on orders, U.S. production locations, and shares of 2017 reported U.S. production

Firm	Position on continuance of the orders	Production location(s)	Share of production (percent)
Broadwind	Support	***	***
GRI Towers	Support	***	***
Marmen	***	***	***
T Bailey	***	***	***
Trinity	Support	***	***
Ventower	Support	***	***
Vestas	***	***	***
Total			100.0

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

Table I-7 presents U.S. producers' ownership, related and/or affiliated firms.

Table I-7
Wind towers: U.S. producers' ownership, related and/or affiliated firms

* * * * * * *

As indicated in table I-7, no U.S. producers are related to foreign producers of the subject merchandise and one is related to a U.S. importer of the subject merchandise. No U.S. producer directly imported the subject merchandise from U.S. importers.

U.S. importers

In the original investigations, 11 U.S. firms supplied the Commission with usable information on their operations involving the importation of wind towers, accounting for 98.6 percent of U.S. imports of wind towers between January 2011 and June 2012. Of the responding U.S. importers, one, Vestas American, was a sister company to domestic producer Vestas.

In the current proceeding, the Commission issued U.S. importers' questionnaires to 40 firms believed to be importers of wind towers, as well as to all U.S. producers of wind towers. Usable questionnaire responses were received from six firms, representing all U.S. imports from China and Vietnam during 2012-17.[68] Table I-8 lists all responding U.S. importers of wind towers from China, Vietnam, and other sources, their locations, and their shares of U.S. imports in 2017.

[68] An additional 12 firms certified that they did not import wind towers from any source since January 1, 2012.

Table I-8
Wind towers: U.S. importers, source(s) of imports, U.S. headquarters, and shares of imports in 2017

Firm	Headquarters	Share of imports by source (percent)			
		China	Vietnam	All other sources	Total
GE	Schenectady, NY	***	***	***	***
Kousa	Los Angeles, CA	***	***	***	***
Senvion	Hamburg, GE	***	***	***	***
Siemens Gamesa	Orlando, FL	***	***	***	***
Trinity	Dallas, TX	***	***	***	***
Vestas American	Portland, OR	***	***	***	***
Total		***	***	***	***

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

U.S. purchasers

The top four wind turbine OEMs (GE Renewable Energy ("GE"), Nordex USA, Siemens Gamesa, and Vestas), who are generally the wind tower purchasers, supplied 99 percent of wind turbine installations in 2017.[69] In 2012, the top four firms supplied 82 percent of the market, and 12 firms supplied at least one percent of the market.[70] Since 2012, a number of industry consolidations and closures have occurred, including:

- GE-Alstom: GE finalized its acquisition of Alstom's power business in November 2015.[71]
- Siemens-Gamesa: Siemens Wind Power and Gamesa finalized their merger in April 2017.[72]
- Acciona-Nordex: ACCIONA Windpower and Nordex finalized their merger in April 2016.[73]
- Clipper Windpower: Ended turbine production in 2012.[74]

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[69] A total of eight OEMs supplied at least one completed project in 2017. American Wind Energy Association (AWEA), U.S. Wind Industry Fourth Quarter 2017 Market Report, January 25, 2018, pp. 3, 13–16, http://awea.files.cms-plus.com/FileDownloads/pdfs/4Q%202017%20AWEA%20Market%20Report%20Public%20Version.pdf.

[70] Wiser, Ryan and Mark Bolinger, 2016 *Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, data file, https://emp.lbl.gov/wind-technologies-market-report.

[71] GE, "GE Completes Acquisition of Alstom Power and Grid Businesses," November 3, 2015, https://www.genewsroom.com/press-releases/ge-completes-acquisition-alstom-power-and-grid-businesses-282204.

[72] Siemens AG, "Merger of Siemens Wind Power and Gamesa," News release, April 3, 2017, https://www.siemens.com/press/en/events/2016/corporate/2016-06-telefonkonferenz.php.

[73] Acciona Windpower, "ACCIONA Windpower and Nordex Complete Merger to Create New Wind Industry Leader," News release, April 4, 2016, https://www.acciona.com/news/acciona-windpower-and-nordex-complete-merger-to-create-new-wind-industry-leader/.

During 2012-17, GE Wind ("GE") accounted for 42 percent of the wind turbine market; Vestas, 26 percent; Siemens Gamesa, 23 percent; and Nordex Acciona, 5 percent.[75]

The Commission received five usable questionnaire responses from firms that bought wind towers since January 1, 2012. [76] Responding firms included ***.[77]

APPARENT U.S. CONSUMPTION AND MARKET SHARES

Data concerning apparent U.S. consumption and market shares of wind towers are shown in table I-9 and figure I-8.

(…*continued*)

[74] Davidson, Ros, "Accusations Fly as First Wind Fights Clipper for Refund," *Windpower Monthly*, December 28, 2012, https://www.windpowermonthly.com/article/1164654/accusations-fly-first-wind-fights-clipper-refund.

[75] Wiser, Ryan and Mark Bolinger, 2017 Wind Technologies Market Report, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2018, data file, https://emp.lbl.gov/wind-technologies-market-report.

[76] ***.

[77] *** reported purchases of domestically produced wind towers, as well as imports from China, Vietnam, and other sources. ***.

Table I-9
Wind towers: U.S. shipments of domestic product, U.S. shipments of imports, and apparent U.S. consumption, 2012-17, January-June 2017, and January-June 2018

Item	Calendar year						January-June	
	2012	2013	2014	2015	2016	2017	2017	2018
	Quantity (units)							
U.S. producers' U.S. shipments	1,471	1,304	2,312	2,672	3,098	2,658	1,454	1,345
U.S. shipments of imports from.--								
China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	2,464	***	1,016	1,331	1,306	1,170	653	***
Apparent consumption	3,935	***	3,328	4,003	4,404	3,828	2,107	***
	Value (1,000 dollars)							
U.S. producers' U.S. shipments	622,139	426,214	914,336	993,000	998,446	835,570	472,242	435,862
U.S. shipments of imports from.--								
China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***
Apparent consumption	1,395,033	***	1,162,265	1,326,875	1,333,641	1,056,688	605,170	***
	Share of quantity (percent)							
U.S. producers' U.S. shipments	37.4	***	69.5	66.7	70.3	69.4	69.0	***
U.S. shipments of imports from.--								
China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	62.6	***	30.5	33.3	29.7	30.6	31.0	***
Apparent consumption	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table continued on next page.

Table I-9—Continued
Wind towers: U.S. shipments of domestic product, U.S. shipments of imports, and apparent U.S. consumption, 2012-17, January-June 2017, and January-June 2018

Item	Calendar year						January-June	
	2012	2013	2014	2015	2016	2017	2017	2018
	Share of value (percent)							
U.S. producers' U.S. shipments	44.6	***	78.7	74.8	74.9	79.1	78.0	***
U.S. shipments of imports from.--China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	55.4	***	21.3	25.2	25.1	20.9	22.0	***
Apparent consumption	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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

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

Figure I-8
Wind towers: Historical apparent U.S. consumption, 2009-17, January-June 2017, and January-June 2018

* * * * * * *

PART II: CONDITIONS OF COMPETITION IN THE U.S. MARKET

U.S. MARKET CHARACTERISTICS

Utility scale 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. Since the original investigation, demand has continued to trend towards taller and heavier wind towers (see Part I).[1] Wind towers are produced to an OEM's specifications, and each OEM typically has multiple tower designs depending on the project site and the wind turbine used.

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. Electricity demand in the United States is supplied primarily by conventional sources, with coal and natural gas accounting for almost two-thirds of all U.S. electricity generated in 2018 (figure II-1). Wind energy accounted for 7 percent of total electricity generated in 2018. 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 21 percent of all new electric generating capacity installed in the United States in 2018 (figure II-2).

According to a recent U.S. Department of Energy ("DOE") report, U.S. wind power capacity continued to experience strong growth in 2017 as a result of government incentives and improvements in the cost and performance of wind power technologies.[2] However, the DOE notes that growth in the wind power market beyond 2020 is uncertain because of declining tax support, expectations for low natural gas prices, and modest growth in demand for electricity.

Apparent U.S. consumption of wind towers fluctuated during the review period, reflecting fluctuations in demand for wind installations, but overall was 2.7 percent lower in 2017 than in 2012.

CHANNELS OF DISTRIBUTION

U.S. producers and importers reported shipping wind towers almost exclusively to end users during the review period (table II-1). U.S. producer Vestas produces wind towers for ***.

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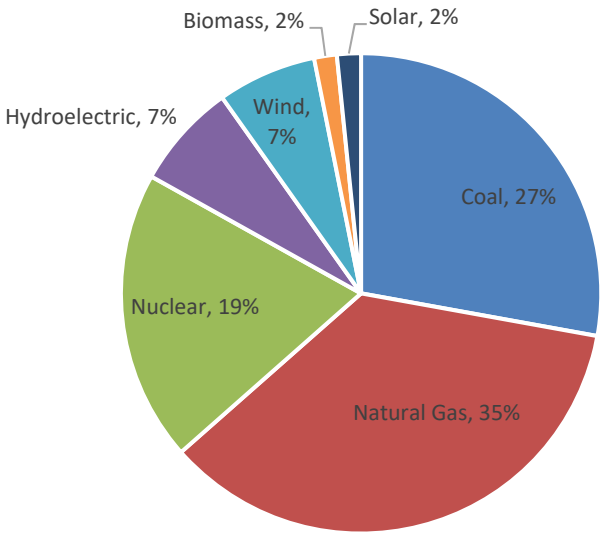
[1] When asked whether there had been changes to the product type or range since January 1, 2012, U.S. producers *** reported an increase in taller, heavier towers to support bigger turbines with higher electricity output. *** also reported a trend toward a larger product mix and lower volume runs.

Among purchasers, *** reported changes in wind turbine designs to meet customer demand for varying sizes and features and to reduce the total cost of wind power. *** reported purchasing imported wind towers from *** because of limited capacity from U.S. suppliers.

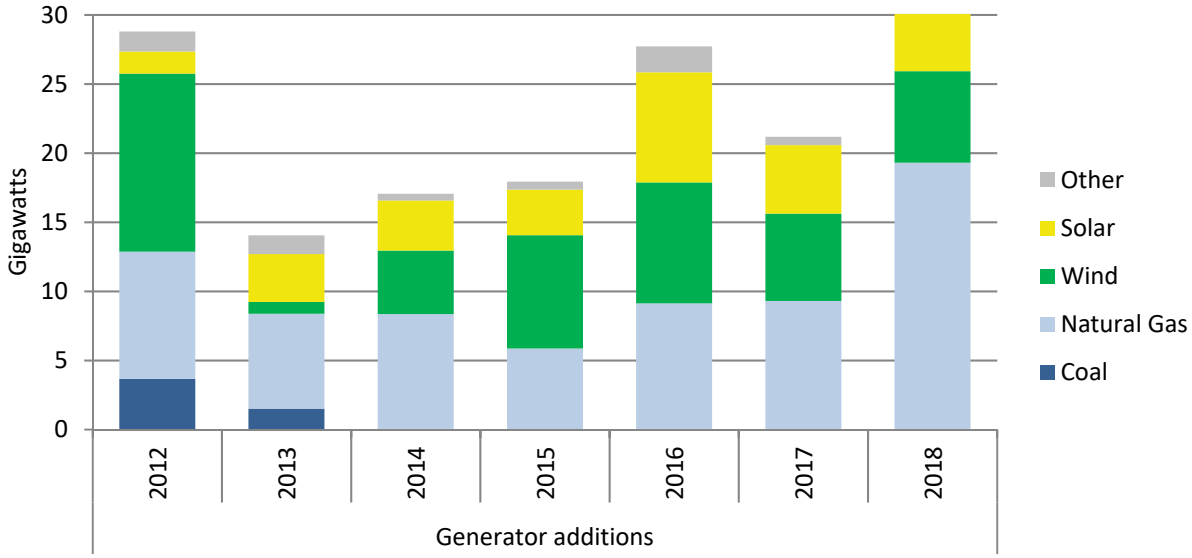
[2] Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. vii, https://emp.lbl.gov/wind-technologies-market-report.

Figure II-1
Net U.S. electricity generation, by sector, 2018



Source: U.S. Energy Information Administration, https://www.eia.gov/electricity/data/browser/, retrieved March 18, 2019.

Figure II-2
New U.S. electricity generating capacity additions by type yearly, 2012-18



Source: "EIA, Electric Power Annual 2012–17, Table 4.6, October 22, 2018, https://www.eia.gov/electricity/annual/; EIA, Electric Power Monthly, Table 6.3, December 2018, https://www.eia.gov/electricity/monthly/."

Table II-1
Wind towers: U.S. producers' and importers' share of reported U.S. commercial shipments, by sources and channels of distribution, 2012-17, January-June 2017, January-June 2018

* * * * * * *

GEOGRAPHIC DISTRIBUTION

U.S. producers reported selling wind towers to all regions in the United States (table II-2). U.S. producers reported that in 2017, *** percent of their shipments were to the Midwest region, *** percent were to the Central Southwest region, and *** percent were to the Mountain region. Importers of Chinese product reported shipments to the ***. Importers of wind towers from Vietnam reported shipments to the ***. In the original investigations, importers reported shipping imports from China to all U.S. geographic regions and shipping imports from Vietnam to all regions in the contiguous United States except for the Southeast.[3]

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

Region	U.S. producers	Importers (China)	Importers (Vietnam)
Northeast	1	***	***
Midwest	5	***	***
Southeast	1	***	***
Central Southwest	6	***	***
Mountain	4	***	***
Pacific Coast	2	***	***
Other[1]	1	***	***
All regions (except Other)	---	***	***
Reporting firms	7	2	2

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

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

For U.S. producers, *** percent of sales were within 100 miles of their production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles.[4] Purchasers reported that *** percent of their purchases were shipped over 1,000 miles, *** percent 501 to 1,000 miles, *** percent 101 to 500 miles, and *** percent less than 100 miles.

Because of the logistical complexity of overland shipping, U.S. producers with facilities in the interior of the country and their customers often face very high transportation costs relative to imported product for sites located near the Atlantic and Pacific Coasts, and to areas

[3] *Utility Scale Wind Towers from China and Vietnam, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. II-1.

[4] Based on 2017 shipments. No data were reported for imports from China or Vietnam in 2017.

outside of the continental United States. Similarly, importers often face very high transportation costs when shipping inland.[5]

SUPPLY AND DEMAND CONSIDERATIONS

U.S. supply

Table II-3 provides a summary of the supply factors regarding wind towers from U.S. producers, China, and Vietnam.

Table II-3
Wind towers: Supply factors that affect the ability to increase shipments to the U.S. market

	Capacity (units)		Capacity utilization (percent)		Ratio of inventories to total shipments (percent)		Shipments by market, 2017 (percent)		Able to shift to alternate products
Country	2012	2017	2012	2017	2012	2017	Home market shipments	Exports to non-U.S. markets	No. of firms reporting "yes"
United States	***	***	***	***	***	***	***	***	4 of 7
China	3,455[1]	--	--	--	--	--	--	--	--
Vietnam	1,600[2]	--	--	--	--	--	--	--	--

[1] 2011 data from responding Chinese producer/exporter firms during the original investigations. *Utility Scale Wind Towers from China and Vietnam, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. II-3.
[2] Data based on three producers in Vietnam identified during the original investigations. *Utility Scale Wind Towers from China and Vietnam, Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final),* USITC Publication 4372, February 2013, p. VII-8.

Note.--Responding U.S. producers are believed to have accounted for all of U.S. production of wind towers in 2017. No questionnaire responses were received from foreign producer/exporter firms. 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 changes in the quantity of shipments of U.S.-produced wind towers to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the availability of unused capacity. Factors mitigating responsiveness of supply include limited inventories, lack of export markets, and limited ability to shift production to or from alternate products.

[5] *Utility Scale Wind Towers from China and Vietnam, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. II-1.

U.S. capacity to produce wind towers increased over the review period, but production outpaced the growth in capacity (78 percent increase, compared with a 61 percent increase), leading to higher capacity utilization in 2017 compared to 2012. Four of seven producers reported some ability to manufacture other products on the same equipment as wind towers, including storage tanks and pressure vessels. Inventories are typically low in this industry since wind towers are typically either produced to order for specific end users or are assigned a project before manufacturing is complete.

U.S. producers reported *** exports of wind towers during most of the review period. ***. Firms reported that high U.S. production costs (including high labor rates) and high transportation costs make it difficult to export wind towers. Most U.S. producers reported no barriers to trade, although *** stated that Brazil and Canada (in particular Ontario and Quebec) have local content requirements for wind towers.

Three of five responding producers and four of five purchasers reported changes in the availability of U.S. product since 2012. U.S. producer *** cited GRI Towers' new plant in Amarillo, Texas. Purchasers *** reported consolidation and closures among U.S. suppliers. Purchaser *** stated that although overall U.S. production capacity has not changed significantly, it has experienced reduced availability because its competitors are buying a larger portion of available domestic capacity.

Two U.S. producers and three purchasers anticipate changes in the availability of U.S. supply. *** stated that some domestic producers will require significant investments to meet new height requirements for towers. *** reported the entry of new U.S. producers because of higher demand spurred by federal tax credits and a trend toward buying U.S. products. *** stated that U.S. capacity will increase or decrease depending on demand for towers.

Subject imports from China

No data was provided from Chinese producers in this review. In the original investigations, staff found that responding Chinese producers had substantial excess capacity and thus had the ability to respond to changes in demand with moderate-to-large changes in the wind towers shipped to the U.S. market.[6]

Imports from Vietnam

No data was provided from Vietnamese producers in this review. During the original investigations, staff found that the Vietnamese industry had the ability to respond to changes in demand with moderate changes in the wind towers shipped to the U.S. market.[7]

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[6] *Utility Scale Wind Towers from China and Vietnam, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. II-3.

[7] *Utility Scale Wind Towers from China and Vietnam, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. II-4.

Imports from other sources

Other major sources of imports during January 2012-June 2018 included Canada, Korea, Indonesia, and Spain.

U.S. producers reported increased availability of nonsubject imports from countries including Indonesia, Korea, Canada, Mexico, and Spain. U.S. producer *** anticipates increased nonsubject imports as U.S. wind tower producers' costs increase because of tariffs on steel products.

Supply constraints

All responding U.S. producers, 4 of 5 responding importers, and 3 of 5 purchasers reported no supply constraints in the market for wind towers. Purchaser *** reported that U.S. producers including Marmen, Ventower, GRI Towers, and Trinity have declined to supply its wind towers needs since these firms have sold out capacity. Purchaser *** also stated that there is insufficient capacity.

New suppliers

Four of five purchasers indicated that new suppliers entered the U.S. market since January 1, 2012, and two expect additional entrants. Three purchasers cited GRI Towers as a new entrant, and one purchaser also cited Dongkuk and Marmen. Purchaser *** stated that a number of foreign suppliers have entered the global market.

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. The main contributing factors are the limited range of substitute products and the small cost share of wind towers in the final cost of wind turbines.[8]

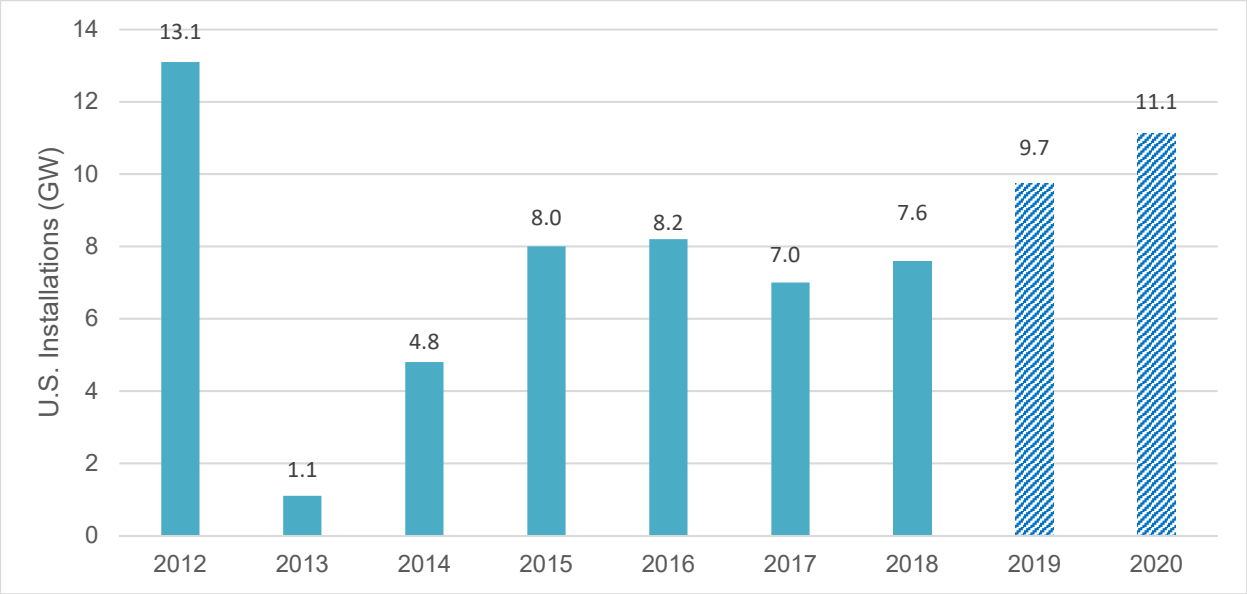
U.S. demand for wind towers depends on the U.S. demand for wind turbines. U.S. utility-scale wind turbine installations declined from 13.1 GW in 2012 to 1.1 GW in 2013, increased in 2014, 2015, and 2016, declined slightly in 2017, and then increased in 2018 (figure II-3). Installations were projected to increase through 2020. The low level of installations in 2013 reflected a push by developers to complete projects in 2012, ahead of the expected expiration of the production tax credit ("PTC," which is discussed below).[9] At the end of 2018,

[8] In the original investigations, most purchasers reported that wind towers account for 15 to 30 percent of the cost of wind turbines. *Utility Scale Wind Towers from China and Vietnam, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. II-12.

[9] Trabish, Herman K, "Wind Gets Production Tax Credit for Another Year with Crucial Language Change," Greentech Media, January 2, 2013, https://www.greentechmedia.com/articles/read/wind-gets-production-tax-credit-for-another-year-with-crucial-language-chan#gs.uDFl52w.

16.5 GW of wind projects were under construction and 18.6 GW were in an advanced stage of development.[10]

Figure II-3
Wind towers: U.S. utility-scale wind turbine installations, 2012-2018 (actual), and forecasted installations, 2019-2020



Source: AWEA, U.S. Wind Industry Fourth Quarter 2018 Market Report, January 30, 2019, pp. 3 and 5, https://www.awea.org/resources/publications-and-reports/market-reports/2018-u-s-wind-industry-market-reports; Wiser, Ryan and Mark Bolinger, 2017 Wind Technologies Market Report, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2018, data file, https://emp.lbl.gov/wind-technologies-market-report.

Note: Forecast installations for 2019 and 2020 are the average forecast installation for several sources as reported in the 2017 Wind Technologies Market Report.

Wind turbine prices have continually declined over the past decade (despite the shift toward larger towers) after peaking in 2008-09 such that wind turbines prices in 2017 were similar to prices in the early 2000s.[11] Wind power installed project costs similarly declined over this time period, and declined from $2,081/kW in 2012 to $1,611/kW in 2017.[12]

The U.S. wind market is driven by a number of factors, including government policies, electricity demand, prices relative to other sources of energy, and the availability of project

[10] AWEA, *U.S. Wind Industry Fourth Quarter 2018 Market Report*, January 30, 2019, p. 3.

[11] Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. 48, https://emp.lbl.gov/wind-technologies-market-report.

[12] Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. 50, https://emp.lbl.gov/wind-technologies-market-report, and WTMR data file, figure 43.

financing. The DOE reported that the environment for project financing was strong in 2017, and that 2018 should also be a strong year.[13]

Wind power incentives

A major driver of wind installations is the production tax credit ("PTC"), a tax credit per kilowatt-hour (kWh) of wind generation for the first 10 years of a wind project (table II-4).[14] The PTC has been renewed three times since the end of 2012, but each time there was a lapse between the end of the previous PTC and the PTC renewal. After each of these lapses, the PTC was retroactively extended. Starting in 2013, projects were eligible for the PTC as long as they started construction prior to the deadline, whereas previously projects had to be completed by the deadline. The PTC has been extended through the end of 2019, but the value of the tax credit is phased down in each year.[15] WTTC stated that is not aware of any information indicating that the PTC will be extended.[16]

Wind projects were 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 scale down at the same rate as the PTC after 2016. The DOE reports that firms typically opt for the PTC rather than the ITC.[17]

The wind industry also benefits from accelerated depreciation.[18] Under the Modified Accelerated Cost-Recovery System (MACRS), wind projects are classified as five-year property, which allows depreciation over a shorter time period.[19] 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

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[13] Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. viii, https://emp.lbl.gov/wind-technologies-market-report.

[14] In 2017, the tax credit, which is adjusted for inflation, was $24/MWh. Wiser, Ryan and Mark Bolinger, 2017 *Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. 66, https://emp.lbl.gov/wind-technologies-market-report.

[15] Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. 66, https://emp.lbl.gov/wind-technologies-market-report.

[16] WTTC's posthearing brief, Answers to Commission questions, p. 54.

[17] Starting in 2009, wind facilities that started construction by the end of 2011 and were completed by the end of 2012 were also eligible for a grant in lieu of the ITC or PTC. Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. 66, https://emp.lbl.gov/wind-technologies-market-report.

[18] Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. 66, https://emp.lbl.gov/wind-technologies-market-report.

[19] DSIRE Website, http://programs.dsireusa.org/system/program/detail/676, retrieved February 6, 2018.

completed by the end of 2017 were eligible for 50 percent first year bonus depreciation, while projects completed in 2018 are eligible for 40 percent and projects completed in 2019 are eligible for 30 percent.[20]

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 29 states and the District of Columbia in July 2017, the same number as in June 2013. Nine states increased the share of energy required from renewable sources, Vermont added a mandatory RPS, Ohio extended the deadline for its RPS, and Kansas changed its mandatory RPS to a voluntary goal.[21]

Table II-4
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

Source: Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. 67, https://emp.lbl.gov/wind-technologies-market-report.

[20] DSIRE Website, http://programs.dsireusa.org/system/program/detail/676, retrieved February 6, 2018.

[21] Wiser, Ryan and Mark Bolinger, *2016 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, pp. 67–68, https://emp.lbl.gov/wind-technologies-market-report; Wiser, Ryan and Mark Bolinger, *2012 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, August 2013, p. 57, https://www1.eere.energy.gov/wind/pdfs/2012_wind_technologies_market_report.pdf.; DSIRE Website, http://programs.dsireusa.org/system/program/detail/3401, retrieved February 6, 2018.

Firms were asked to describe the impact of government policies on demand for wind towers. Among U.S. producers, *** expects increased demand in 2019-2020 before the PTC phaseout begins in 2021, *** also reported that the expiration of the PTC will decrease overall demand for wind towers, and *** stated that the PTC has helped the wind towers market but that antidumping duties on wind towers have had the opposite effect. *** stated it cannot anticipate the impact on demand of government policies but that it has experienced significant swings in demand since 2012 as a result of changes in government policy as well as fluctuations in wind tower imports.

*** expects reduced demand after the PTC expires, but stated that the offshore wind market is expected to increase by 2020, and that current tower OEM suppliers do not have the technology and equipment to fulfill the requirements of this market.[22] It also stated that increased steel and aluminum costs will reduce the competitiveness of local suppliers for the wind industry. *** anticipates a significant drop in demand after 2020 due to expiration and uncertainty of renewal of the PTC. *** stated that overall demand for wind turbines has increased when the PTC and ITC have been active and has fallen sharply when they are not active. In addition, it stated that corporate tax code changes in 2017 have negatively impacted the industry despite the ongoing PTC, since the tax credit is only a benefit to customers if they have a tax burden to offset. *** also stated that demand is expected to rise starting in late 2019 and into 2020 due to the need to finalize projects before the expiration of the current PTC. *** stated that demand factors include the growth in renewable energy and lower cost of wind energy compared to other sources of energy, and that the "on-again off-again" PTC cycle contributes to market fluctuations.

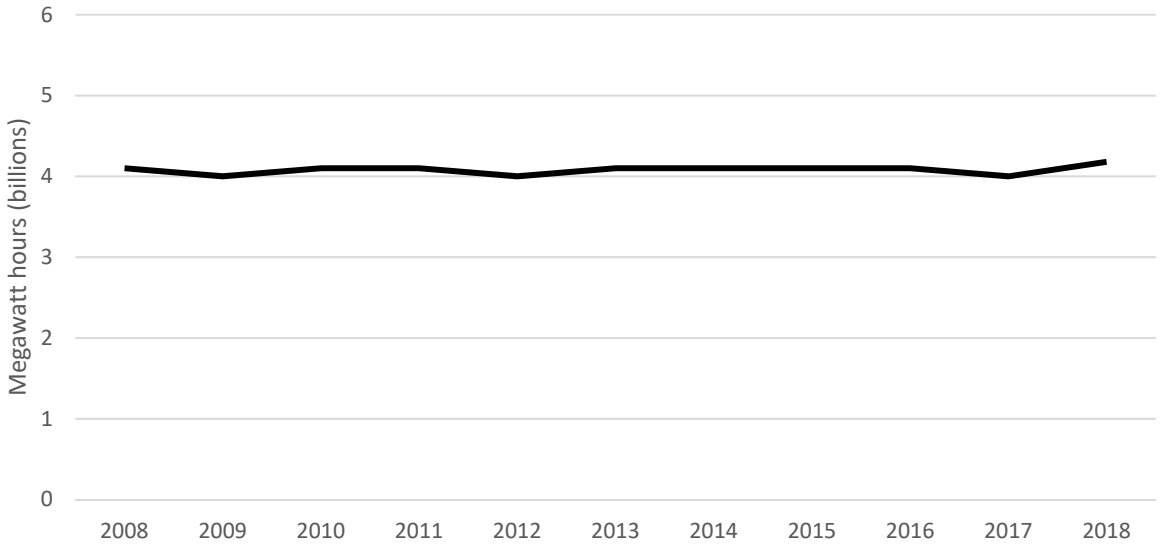
Electricity demand and prices

One factor affecting the demand for wind turbines is the demand for electricity. U.S. electricity demand has been generally stable over the past decade, between 4.0 and 4.2 thousand megawatt-hours per year (figure II-4). Another factor affecting wind turbine demand is the cost of competing sources of energy. One measure of the competitiveness of energy sources is the levelized cost of energy ("LCOE").[23] EIA's 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 ($37/MWh) compared to other sources including geothermal, solar, and natural gas.

[22] The offshore wind market is a very small share of the U.S. wind market, with a total project pipeline of 25,434 MW as of June 2018. WTTC's posthearing brief, Answers to Commission questions, p. 13, and exhibit 4, "U.S. Offshore Wind Industry Status Update."

[23] LCOE represents the per-kilowatt hour cost of building and operating a generated plant over an assumed financial life and duty cycle. U.S. Energy Information Administration, "Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2018," March 2018, p. 1.

Figure II-4
U.S. electric power generation, 2008-18



Source: Energy Information Administration, "Net Generation by Energy Source", https://www.eia.gov/electricity/monthly/, February 27, 2019.

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

	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: U.S. Energy Information Administration, "Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2019," February 2019, p. 7.

Prices for wind-generated electricity have steadily declined since the time of the original investigations and have continued to decline during the period of review. Average capacity-weighted power purchase agreement ("PPA") prices declined from $39/MWh for those signed

in 2012 to $19/MWh for those signed in 2017 (table II-6). According to the DOE, these record-low levels are attributable to declining costs, improved performance, historically low (but rising) interest rates, and natural gas prices.[24] Natural gas prices have declined since the original investigation and have fluctuated during the review period (table II-7).

Table II-6
Nationwide power purchase agreement ("PPA") prices for wind-generated electricity, by date of PPA signing, in real 2017 dollars

PPA Execution Year	Dollars/MWh
2009	70.86
2010	61.61
2011	44.33
2012	38.97
2013	27.79
2014	24.68
2015	28.40
2016	26.65
2017	18.91

Source: Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. 59, https://emp.lbl.gov/wind-technologies-market-report, and WTMR data file, figure 51.

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

Year	Dollars per thousand cubic feet
2009	4.93
2010	5.27
2011	4.89
2012	3.54
2013	4.49
2014	5.19
2015	3.38
2016	2.99
2017	3.52
2018	3.67

Source: U.S. Energy Information Administration, https://www.eia.gov/dnav/ng/hist/n3045us3A.htm, retrieved March 11, 2019.

Business cycles

Two of 6 U.S. producers, 3 of 6 importers, and 3 of 5 purchasers indicated that the wind tower market was subject to business cycles. Many of these firms reported that government

[24] Wiser, Ryan and Mark Bolinger, *2017 Wind Technologies Market Report*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, 2017, p. 59, https://emp.lbl.gov/wind-technologies-market-report, and WTMR data file, figure 51.

policies, particularly the PTC, affects the business cycle. Firms reported that demand tends to be high shortly before the expiration of the PTC and then low after the PTC expires. U.S. producer *** stated that demand used to be spread throughout the year, but that in 2017 and 2018 there have been dips in demand in the fourth quarter as customers "align their orders with specific project needs requiring shorter lead times." Purchaser *** stated that the PTC incentivizes developers to complete projects by year-end, which has increased tower production in the second half of the year and lowered production in the first quarter of the year. In addition, purchaser *** stated that power demand and fossil fuel production affect the business cycle, and U.S. producer *** stated that the U.S. wind tower industry is vulnerable to spikes in imports because of the section 232 tariffs on steel.

Demand trends

Firms reported mixed answers regarding U.S. demand for wind towers since January 1, 2012 and anticipated future demand (table II-8).[25] These varying answers likely reflect the annual fluctuations in demand for new wind installations. U.S. producer *** reported that demand has fluctuated with changes in government policies, including the PTC and steel tariffs. Some firms reported that they anticipate increased demand as a result of the PTC phaseout and then reduced demand after 2020 when the PTC expires.

Table II-8
Wind towers: Firms' responses regarding U.S. demand

Item	Increase	No change	Decrease	Fluctuate
Demand in the United States				
U.S. producers	3	1	---	2
Importers	2	---	1	3
Purchasers	---	1	1	3
Foreign producers	---	---	---	---
Anticipated future demand				
U.S. producers	1	1	2	2
Importers	1	---	3	2
Purchasers	1	1	1	2
Foreign producers	---	---	---	---
Demand for purchasers' final products since 2012				
Purchasers	3	---	---	1

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

Purchaser *** reported increased demand since 2012 related to the PTC, component prices, and the cost of wind energy compared to other forms of energy production. Purchaser *** reported high demand for wind towers globally, but no increase in the U.S. market, and

[25] Most firms (5 of 6 U.S. producers, 2 of 3 responding importers, and 2 of 3 responding purchasers) reported no change in the demand for wind towers as a result of the announcement and subsequent implementation of remedies in the section 301 investigation and tariff actions regarding wind towers.

stated that its U.S. business has been slow since 2012. Purchaser *** stated that demand for wind turbines is driven significantly by the timing and availability of tax credits, and is also affected by developments of competing energy products, tax legislation, and the tariffs on steel inputs used in domestic tower production. *** stated that demand trends are related to renewable energy growth and a lower LCOE compared to other energy sources, and that the on-again/off-again PTC cycle contributes to market fluctuations.

Substitute products

Most firms reported no changes since 2012, or anticipated changes, in substitutes for wind towers. Two purchasers anticipate increased use of concrete towers and hybrid towers (concrete towers with steel top sections). Purchaser *** anticipates continued development of concrete towers because of import restrictions on wind towers and increases in domestic steel prices.

SUBSTITUTABILITY ISSUES

The degree of substitution between domestic and imported wind towers depends upon such factors as relative prices, quality (e.g., grade standards, defect rates, etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, reliability of supply, product services, etc.). 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 China and Vietnam. In general, wind towers produced to the same specifications by an OEM-qualified manufacturer are interchangeable, but high transportation costs can limit substitutability. In addition, some purchasers reported a preference for domestically-produced wind towers and some purchasers reported that larger diameter wind towers are not available from U.S. producers.

Lead times

Wind towers are primarily produced-to-order to meet OEM specifications. U.S. producers reported that in 2017, 100 percent of their commercial shipments were produced-to-order, with lead times ranging from 90 to 160 days.[26]

Knowledge of country sources

All five responding purchasers indicated they had marketing/pricing knowledge of domestic product, and four firms had knowledge of product from China, Vietnam, and other countries.

[26] Importers did not provide data on lead times since they either did not import from subject countries or do not sell wind towers.

As shown in table II-9, most purchasers and their customers "sometimes" or "never" make purchasing decisions based on the producer or country of origin. The one purchaser (***) that reported that it "always" makes decisions based on the country of origin stated that its purchases focus on domestic towers. Purchaser *** stated that factory level loading, quality, and availability of capacity affect its purchasing decisions, and that it has adapted its supply chains to alternate sources to avoid duties on subject imports.

Table II-9
Wind towers: Purchasing decisions based on producer and country of origin

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

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

Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for wind towers were quality and price (each cited by all 5 responding purchasers) and availability/capacity (3 firms) as shown in table II-10. Quality was the most frequently cited first-most important factor (cited by 3 firms).

Table II-10
Wind towers: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third	Total
Quality	3	1	1	5
Price/landed cost	1	1	3	5
Availability/capacity	0	0	3	3
Other[1]	1	1	2	4

[1] Other factors include safety for the first factor, site proximity/transportation costs for the second factor, and capability and contract provisions for the third factor.

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

In addition to their top three factors, other factors listed by firms included: capacity, price, terms, overall performance, technical cooperation, terms and conditions, flexibility to change products/delay or push in production, financial status, experience, credibility, relationships with raw material suppliers, logistics expertise, and storage capacity.

Three of five purchasers specifically order wind towers from one country in particular over other possible sources of supply. Reported reasons included: large diameter towers are not available domestically, and certain projects/customers request U.S.-produced products. *** stated that offshore towers, onshore towers with a larger diameter above 4.5m, and certain sizes and weights are not available from certain sources. *** stated that larger dimension towers are only available in Asia. *** stated that offshore towers have limited to no availability

in the United States. *** reported that certain projects and customers have requested U.S.-produced products.

Quality characteristics noted by purchasers include the quality of welding, paint/surface coating, steel, machining, and adherence to the OEMs specifications.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 18 factors in their purchasing decisions (table II-11). The factors rated as very important by more than half of responding purchasers were availability, delivery time, and reliability of supply (5 each); available capacity, delivery terms, price, product consistency, quality meets industry standards, and U.S. transportation costs (4 each); and technical support/service and transportation costs to the United States (3 each).

Table II-11
Wind towers: Importance of purchase factors, as reported by U.S. purchasers, by factor

Factor	Very important	Somewhat important	Not important
Availability	5	---	---
Available capacity	4	1	---
Delivery terms	4	1	---
Delivery time	5	---	---
Discounts offered	2	3	---
Lifetime cost	2	3	---
Minimum quantity requirements	---	3	2
Packaging	---	4	1
Payment terms	2	3	---
Price	4	1	---
Product consistency	4	1	---
Product range	1	3	1
Quality meets industry standards	4	1	---
Quality exceeds industry standards	2	2	1
Reliability of supply	5	---	---
Technical support/service	3	1	1
Transportation costs to the U.S.	3	1	1
U.S. transportation costs	4	1	---

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

Supplier certification

Four of five responding purchasers require their suppliers to become certified or qualified to sell wind towers to their firm. Purchasers reported that the time to qualify a new supplier ranged from 100 to 365 days.[27]

[27] Firms reported the following qualifying times: ***.

Purchasers described different requirements for their certification processes. *** requires a detailed manufacturing process plan and quality and inspection processes. *** requires various ISO, manufacturing, and other audits; a record of past performance with other customers; and ***. *** requires a supplier questionnaire. *** evaluates capacity, quality, safety, reliability, cost, delivery, and relationship.

Purchasers' reported qualified suppliers are shown in table II-12. Two of five purchasers reported that a supplier had failed in its attempt to qualify product, or had lost its approved status since January 1, 2012. *** stated that *** failed to qualify due to quality performance. *** indicated that firms failed to qualify ***.

Table II-12
Wind towers: Purchasers' qualified suppliers, by country

* * * * * * *

Changes in purchasing patterns

Three of five purchasers (***) purchased wind towers from China and Vietnam before the order. All three of these firms indicated that they stopped purchasing from China because of the order. Two of the three firms (***) reduced purchases from Vietnam because of the order, and one (***) stated that its purchases from Vietnam were unchanged. Regarding purchases from other countries, ***. ***. ***. ***.

Purchasers were asked about changes in their purchasing patterns from different sources since 2012 (table II-13). Purchasers reported the following reasons for changes in sourcing: a focus on purchasing from domestic producers, U.S. producer capacity constraints, changes in overall demand, antidumping duties on towers, and project locations.

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

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

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

***.

Importance of purchasing domestic product

Three responding purchasers reported that most or all of their purchases did not require purchasing U.S.-produced product. One purchaser (***) reported that domestic product was required by its customers (for 10 percent of its purchases).

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing wind towers produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 18 factors (table II-14) for which they were asked to rate the importance.

Most purchasers reported that wind towers from all sources as comparable on most of the 18 factors. The exceptions were discounts offered (for which 2 of 4 purchasers indicated that the U.S. product was inferior to imports from China and Vietnam), price (for which 3 of 4 purchasers indicated that Chinese product was lower-priced and 2 of 4 indicated that Vietnamese product was lower-priced compared to domestic), transportation costs to the United States (majority of firms stated that imports from China and Vietnam had higher transport costs), and product range (2 of 4 firms stated that U.S. was inferior to China).

In comparing wind towers from China with those from Vietnam, a majority of firms rated the products as comparable for every factor except discounts offered and price, for which half of firms rated the Chinese product as superior to the product from Vietnam, and half rated them as comparable.

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 China and Vietnam, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-15, the majority of responding producers, importers, and purchasers rated the products from all sources as always interchangeable.

Purchaser *** stated that wind towers from different sources are physically are interchangeable if they meet quality criteria. However, because of high transportation costs, the proximity of a producer to a project site makes domestic and imported wind towers only sometimes interchangeable. It further stated that U.S. producers located in the Central United States have a competitive advantage to supply project sites in those regions whereas imported towers have an advantage to supply projects on the coasts.

As can be seen from table II-16, all responding purchasers reported that domestically produced wind towers and imported wind towers from China and Vietnam “always” or “usually” met minimum quality specifications.

In addition, U.S. producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of wind towers from the United States, subject, or nonsubject countries. As seen in table II-17, U.S. producers reported that differences other than price were “sometimes” or “never” significant in their sales of wind towers. A majority of importers and purchasers reported that non-price differences were “always” or “frequently” significant in comparing U.S.-produced wind towers and those imported from China and Vietnam.

Table II-14
Wind towers: Purchasers' comparisons between U.S.-produced and imported product

Factor	U.S. vs. China			U.S. vs. Vietnam			China vs. Vietnam		
	S	C	I	S	C	I	S	C	I
Availability	1	3	---	1	3	---	---	4	---
Available capacity	---	3	1	---	3	1	1	3	---
Delivery terms	---	3	1	---	3	1	---	4	---
Delivery time	1	3	---	1	3	---	---	4	---
Discounts offered	---	2	2	---	2	2	2	2	---
Lifetime cost	---	3	---	---	3	---	---	3	---
Minimum quantity requirements	---	3	1	---	3	1	1	3	---
Packaging	---	3	---	---	3	---	---	3	---
Payment terms	---	4	---	---	4	---	---	4	---
Price[1]	---	1	3	1	1	2	2	2	---
Product consistency	---	4	---	---	3	---	---	3	---
Product range	---	2	2	---	3	1	---	4	---
Quality meets industry standards	---	4	---	---	4	---	---	4	---
Quality exceeds industry standards	---	4	---	---	4	---	---	4	---
Reliability of supply	---	4	---	---	4	---	---	4	---
Technical support/service	---	4	---	---	4	---	---	4	---
Transportation costs to the U.S.[1]	3	1	---	3	---	1	---	4	---
U.S. transportation costs[1]	---	4	---	1	3	---	1	3	---
	U.S. vs. all other countries			**China vs. all other countries**			**Vietnam vs. all other countries**		
	S	C	I	S	C	I	S	C	I
Availability	1	2	---	---	2	---	---	2	---
Available capacity	---	2	1	1	2	---	---	3	---
Delivery terms	---	3	---	1	2	---	---	3	---
Delivery time	1	2	---	1	2	---	---	3	---
Discounts offered	---	1	2	1	2	---	---	3	---
Lifetime cost	---	3	---	---	3	---	---	3	---
Minimum quantity requirements	---	2	1	1	2	---	---	3	---
Packaging	---	3	---	---	3	---	---	3	---
Payment terms	---	3	---	---	3	---	---	3	---
Price[1]	---	1	2	1	2	---	---	3	---
Product consistency	---	3	---	---	3	---	---	3	---
Product range	---	2	1	---	3	---	---	3	---
Quality meets industry standards	---	3	---	---	3	---	---	3	---
Quality exceeds industry standards	---	3	---	---	3	---	---	3	---
Reliability of supply	---	3	---	---	3	---	---	3	---
Technical support/service	---	3	---	---	3	---	---	3	---
Transportation costs to the U.S.[1]	2	1	---	---	3	---	---	3	---
U.S. transportation costs[1]	---	3	---	---	3	---	---	3	---

[1] A rating of superior means that price/U.S. transportation costs is generally lower.

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

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

Table II-15
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				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. China	4	1	---	---	4	---	1	---	3	---	1	---
U.S. vs. Vietnam	4	1	---	---	4	---	1	---	3	---	1	---
China vs. Vietnam	4	1	---	---	4	---	1	---	3	---	1	---
U.S. vs. all other countries	4	2	---	---	5	---	1	---	3	---	1	---
China vs. all other countries	4	1	---	---	5	---	1	---	3	---	1	---
Vietnam vs. all other countries	4	1	---	---	5	---	1	---	3	---	1	---

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

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

Table II-16
Wind towers: Ability to meet minimum quality specifications, by source[1]

Source	Always	Usually	Sometimes	Rarely or never
United States	2	3	---	---
China	1	3	---	---
Vietnam	1	3	---	---

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

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

Table II-17
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				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. China	---	1	2	2	***	***	***	***	2	1	---	1
U.S. vs. Vietnam	---	1	2	2	***	***	***	***	2	1	---	1
China vs. Vietnam	---	---	1	2	***	***	***	***	1	1	---	1
U.S. vs. all other countries	---	1	3	2	***	***	***	***	2	1	---	1
China vs. all other countries	---	1	1	2	***	***	***	***	1	1	---	1
Vietnam vs. all other countries	---	1	1	2	***	***	***	***	1	1	---	1

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

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

Purchaser *** stated that quality, availability, transportation network, product range, and technical support are always base requirements for its purchases, and that wind towers must meet specified standards regardless of price.

ELASTICITY ESTIMATES

This section discusses elasticity estimates. WTTC did not comment on these estimates in its prehearing or posthearing briefs.

U.S. supply elasticity

The domestic supply elasticity[28] for wind towers measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of wind towers. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced wind towers. Analysis of these factors above indicates that the U.S. industry is likely to be able to moderately increase or decrease shipments to the U.S. market; an estimate in the range of 3 to 6 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for wind towers measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of wind towers. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the wind towers in the production of any downstream products. Based on the available information, the aggregate demand for wind towers is likely to be highly inelastic; a range of -0.1 to -0.4 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[29] Product differentiation, in turn, depends upon such factors as quality, conditions of sale, and factory capability. Based on available information, the elasticity of substitution between U.S.-produced wind towers and imported wind towers is likely to be moderate to high, in the range of 3 to 5.

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

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

PART III: CONDITION OF THE U.S. INDUSTRY

OVERVIEW

The information in this section of the report was compiled from responses to the Commission's questionnaires. Seven firms, which accounted for all U.S. production of wind towers during 2017, supplied information on their wind tower operations in these reviews.

Since the Commission's original investigations, several developments have occurred in the wind tower industry. Table III-1 presents publicly available information on plants opened and closed, as well as physical capacity expansions since the original investigations.

Table III-1
Wind towers: Recent developments in the U.S. industry, 2012 to present

Item / Firm	Date	Recent events
Expansions:		
Vestas	2013	Capacity expansion: Invested $1.9 million in paint curing and transport tooling
Vestas	2014	Building expansion: Invested $5 million in blasting, air compressors, and finishing.
Vestas	September 2016	Announced $18.5 million investment to expand plant.
Broadwind	2017	Completed capacity expansion in Abilene, TX that expanded production capacity at the facility from 150 to 200 towers per year (and overall company-wide capacity from 500 to 550 towers).
Plant openings:		
Marmen	Q4 2014	Started production at plant in Brandon, SD. The plant was originally built by Broadwind to make wind towers, but the facility was never opened and subsequently sold.
GRI Towers	Approximately October 2016	Opened new tower plant in Amarillo, TX.

Table continued on next page.

Table III-1—Continued
Wind towers: Recent developments in the U.S. industry, 2012 to present

Item / Firm	Date	Recent events
Closures and bankruptcies:		
SIAG Aerisyn	April 2012	Filed for reorganization under chapter 11 of the bankruptcy code following similar filing by German parent company.
Katana	June 2012	Announced that it was seeking a buyer and would lay off workers and eventually close its plants if not able to find a buyer.
Martifer-Hirschfeld Energy Systems	July 2012	Hirschfeld Industries bought Martifer half of joint venture and transitioned to products for oil and gas industries.
Trinity	July 2012	Announced plan to convert some plants from wind tower production to railcar production in the second half of the year.
Katana	November 2012	Valmont purchased plant in Columbus, Nebraska and indicated that it would produce transmission structures at the plant.
Katana	April 2013	Auction of equipment from Ephrata, WA and Columbus , NE plants.
Trinity	January 2013	Reported that the wind tower plant that Trinity purchased from DMI in October 2012 and idled in November 2012 would convert to producing non-wind products.
SIAG Aerisyn	June 2013	Bankruptcy petition (originally filed in April 2012) changed from Chapter 11 type to Chapter 7. Production had already stopped in 2012.
Johnson Plate and Tower Fabrication, Inc.	October 2014	Chapter 7 bankruptcy filing.
Other:		
DMI/Trinity	June 2012	Otter Tail entered into definitive agreement to sell DMI plants to Trinity Industries.
Vestas	January 2013	Announced that it reached agreements to sell towers to other companies.
Trinity	December 2017	Announced that the company would spin off infrastructure-related businesses, including wind tower manufacturing, into a separate company.
Trinity	November 2018	Spinoff of infrastructure related business (including wind towers, is completed. New company is named Arcosa Inc.

Notes continued on next page.

Source: Renewables Now, "Trinity Industries to Separate Infrastructure Operations," December 13, 2017, https://renewablesnow.com/news/trinity-industries-to-separate-infrastructure-operations-594438/; Broadwind Energy, "Investor Presentation," Roth Investor Conference," March 13–14, 2017, p. 7, http://s21.q4cdn.com/204186877/files/doc_presentations/2017/March-2017-Investor-Deck.pdf; Broadwind Energy, "Investor Presentation." December 2017, p. 9, http://s21.q4cdn.com/204186877/files/doc_presentations/2017/December-17-Investor-Deck-V2.pdf; Broadwind Energy, "Broadwind Energy Announces Expansion of Abilene, TX Tower Facility," July 29, 2016, http://www.bwen.com/investors/investor-news/press-release-details/2016/Broadwind-Energy-Announces-Expansion-of-Abilene-TX-Tower-Facility/default.aspx; News Channel 10, "GRI Looking for More Employees," December 1, 2016, http://www.newschannel10.com/story/33849766/gri-looking-for-more-employees; Pueblo Economic Development Corp. Website, https://www.pedco.org/news/vestas-announces-expansion/, retrieved February 13, 2018; Jaffe, Mark, "Vestas Strikes Deal to Sell Wind Towers and Starts Hiring in Pueblo," *The Denver Post*, January 16, 2013 ; Vestas, "Vestas Towers in Pueblo Colorado," p. 10, https://www.pueblo.us/AgendaCenter/ViewFile/Item/6044?fileID=13243; Selko, Adrienne, "Canadian Wind Tower Manufacturer Launches First US Plant," *Industry Week*, May 29, 2013, http://www.industryweek.com/expansion-management/canadian-wind-tower-manufacturer-launches-first-us-plant; Pare, Mike, "Alstom Sells Riverfront Parkway Site for $3.5 Million," Times Free Press, March 24th, 2015, http://www.timesfreepress.com/news/business/aroundregion/story/2015/mar/24/alstom-sells-aerisyns0010riverfront-parkway-s/294886/; Reuer, Wendy, "West Fargo's Trinity Containers to Close Permanently, April 20, 2016, http://www.westfargopioneer.com/business/4013842-west-fargos-trinity-containers-close-permanently; DMI Wind Turbine Plant Closes in West Fargo, November 7, 2012, http://www.westfargopioneer.com/news/business/439339-dmi-wind-turbine-plant-closes-west-fargo; BusinessBankruptcies.com Website, https://businessbankruptcies.com/cases/johnson-plate-tower-fabrication-inc, retrieved February 13, 2018; Trinity, "Trinity Industries, Inc. Announces Completion of Spin-off of Arcosa, Inc.and Resizing of Corporate Credit Facility," News release, November 1, 2018, http://www.trin.net/file/4041526/Index?KeyFile=1500114985; Hilco Industrial Website, https://www.hilcoind.com, retrieved December 4, 2018; *Utility Scale Wind Towers from China and Vietnam, Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, Publication 4372, February 2013, III-3–III-4.

Changes experienced by the industry

Domestic producers were asked to indicate whether their firm had experienced any plant openings, relocations, expansions, acquisitions, consolidations, closures, or prolonged shutdowns because of strikes or equipment failure; curtailment of production because of shortages of materials or other reasons, including revision of labor agreements; or any other change in the character of their operations or organization relating to the production of wind towers since 2012. All seven domestic producers indicated that they had experienced such changes; their responses are presented in table III-2.

Table III-2
Wind towers: U.S. producers' reported changes in operations since January 1, 2012

* * * * * * *

Anticipated changes in operations

The Commission asked domestic producers to report anticipated changes in the character of their operations relating to the production of wind towers. Their responses appear in table III-3.

Table III-3
Wind towers: Anticipated changes in the character of U.S. operations

* * * * * * *

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Table III-4 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. Domestic producers' wind tower production increased by 77.7 percent between 2012 and 2017 and was 14.7 percent lower in January-June 2018 than in January-June 2017. Capacity also increased by 60.6 percent during 2012-17, and was 2.2 percent higher in January-June 2018 than in January-June 2017.

Table III-4
Wind towers: U.S. producers' production, capacity, and capacity utilization, 2012-17, January-June 2017, and January-June 2018

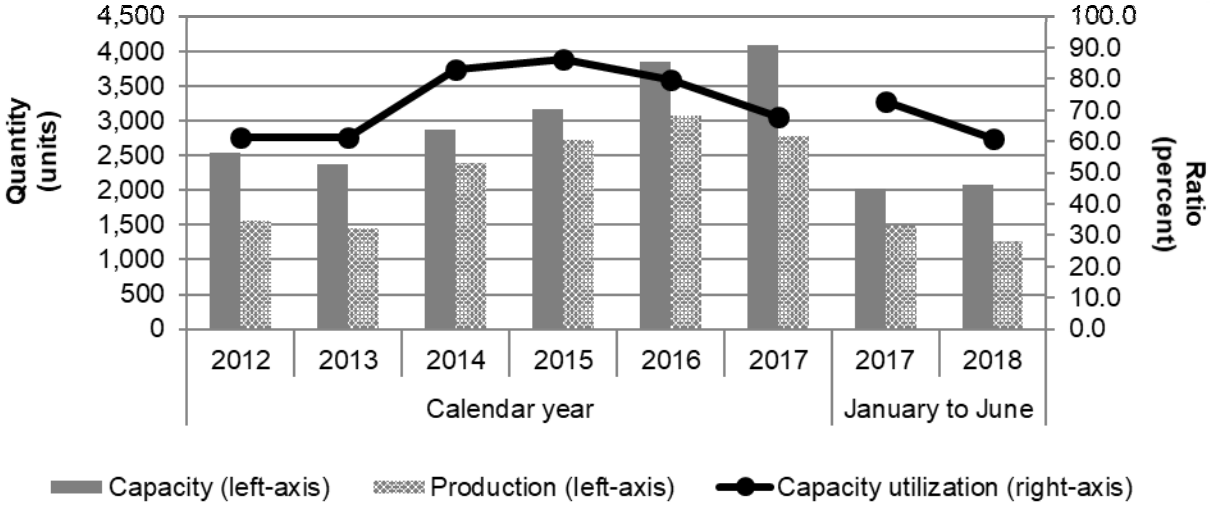
Item	Calendar year						January-June	
	2012	2013	2014	2015	2016	2017	2017	2018
	Capacity (units)							
Broadwind	***	***	***	***	***	***	***	***
GRI Towers	***	***	***	***	***	***	***	***
Marmen	***	***	***	***	***	***	***	***
T Bailey	***	***	***	***	***	***	***	***
Trinity	***	***	***	***	***	***	***	***
Ventower	***	***	***	***	***	***	***	***
Vestas	***	***	***	***	***	***	***	***
Total capacity	2,548	2,371	2,876	3,164	3,843	4,092	2,030	2,075
	Production (units)							
Broadwind	***	***	***	***	***	***	***	***
GRI Towers	***	***	***	***	***	***	***	***
Marmen	***	***	***	***	***	***	***	***
T Bailey	***	***	***	***	***	***	***	***
Trinity	***	***	***	***	***	***	***	***
Ventower	***	***	***	***	***	***	***	***
Vestas	***	***	***	***	***	***	***	***
Total production	1,564	1,453	2,392	2,727	3,070	2,780	1,479	1,262
	Capacity utilization (percent)							
Broadwind	***	***	***	***	***	***	***	***
GRI Towers	***	***	***	***	***	***	***	***
Marmen	***	***	***	***	***	***	***	***
T Bailey	***	***	***	***	***	***	***	***
Trinity	***	***	***	***	***	***	***	***
Ventower	***	***	***	***	***	***	***	***
Vestas	***	***	***	***	***	***	***	***
Average capacity utilization	61.4	61.3	83.2	86.2	79.9	67.9	72.9	60.8

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

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

Figure III-1

Wind towers: U.S. producers' capacity, production, and capacity utilization, 2012-17, January-June 2017, and January-June 2018



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

Expected production

Six of seven firms reported their expected production based on order books. The remaining U.S. producer, ***, ceased wind tower production in 2012. These data are presented in table III-5.

Table III-5

Wind towers: Producers' expected production based on order books, July 2018-December 2019

* * * * * * *

Constraints on capacity

Six of the seven responding U.S. producers reported constraints in the manufacturing process. Constraints in the manufacturing process include labor and raw material availability, limitations of equipment and building size, and regulations regarding painting of sections.

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 by quantity increased by 80.7 percent during 2012-17, and were 7.5 percent lower in January-June 2018 than in January-June 2017. U.S. producers' U.S. shipments by value increased by 34.3 percent during 2012-17 but were 7.7 percent lower in January-June 2018 than in January-June 2017. Average unit values decreased by 25.7 percent between 2012 and 2017 but were slightly lower in intern 2018 than in interim 2017.

U.S. producer *** reported exporting wind towers to ***. *** reported company related transfers to affiliate ***, which accounted for all such shipments during the period for which data were collected. These transfers made up the majority of *** reported total shipments.

Table III-6
Wind towers: U.S. producers' U.S. shipments, exports shipments, and total shipments, 2012-17, January-June 2017, and January-June 2018

Item	Calendar year						January-June	
	2012	2013	2014	2015	2016	2017	2017	2018
	Quantity (units)							
Commercial shipments	***	***	***	***	***	***	***	***
Internal consumption	***	***	***	***	***	***	***	***
Transfers	***	***	***	***	***	***	***	***
U.S. shipments	1,471	1,304	2,312	2,672	3,098	2,658	1,454	1,345
Export shipments	***	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***	***
	Value (1,000 dollars)							
Commercial shipments	***	***	***	***	***	***	***	***
Internal consumption	***	***	***	***	***	***	***	***
Transfers	***	***	***	***	***	***	***	***
U.S. shipments	622,139	426,214	914,336	993,000	998,446	835,570	472,242	435,862
Export shipments	***	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***	***
	Unit value (dollars per unit)							
Commercial shipments	***	***	***	***	***	***	***	***
Internal consumption	***	***	***	***	***	***	***	***
Transfers	***	***	***	***	***	***	***	***
U.S. shipments	422,936	326,851	395,474	371,632	322,287	314,360	324,788	324,061
Export shipments	***	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***	***
	Share of quantity (percent)							
Commercial shipments	***	***	***	***	***	***	***	***
Internal consumption	***	***	***	***	***	***	***	***
Transfers	***	***	***	***	***	***	***	***
U.S. shipments	***	***	***	***	***	***	***	***
Export shipments	***	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***	***
	Share of value (percent)							
Commercial shipments	***	***	***	***	***	***	***	***
Internal consumption	***	***	***	***	***	***	***	***
Transfers	***	***	***	***	***	***	***	***
U.S. shipments	***	***	***	***	***	***	***	***
Export shipments	***	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***	***

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

U.S. PRODUCERS' INVENTORIES

Table III-7 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. The U.S. industry's inventories of wind towers increased more than *** between 2012 and 2017, and was *** percent higher in January-June 2018 than in January-June 2017. The ratio of inventories to production ranged between *** percent in 2013 and *** percent in 2017. The ratio of inventories to U.S. shipments followed a similar trend and ranged from *** percent in 2013 and *** percent in 2017.

Table III-7
Wind towers: U.S. producers' inventories, 2012-17, January-June 2017, and January-June 2018

* * * * * * *

U.S. PRODUCERS' IMPORTS AND PURCHASES

Table III-8 presents data on individual U.S. producers' U.S. production and U.S imports of wind towers from subject sources. Vestas's sister company directly imported the subject merchandise from ***, while *** imported *** from ***. No U.S. producer reported purchases of wind towers from any source.

Table III-8
Wind towers: U.S. producers' U.S. imports, 2012-17, January-June 2017, and January-June 2018

* * * * * * *

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-9 shows U.S. producers' employment-related data. All employment-related indicators increased during 2012-17. The number of production and related workers ("PRWs") increased by 67.2 percent during 2012-17 and was 10.6 percent lower in January-June 2018 than in January-June 2017. This is indicative of several plant openings and expansions discussed above. Wages paid similarly increased and doubled during 2012-17, but was 12.9 percent lower in January-June 2018 than in January-June 2017. Productivity and unit labor costs also increased between 2012 and 2017, by 15.9 percent and 12.2 percent respectively, and were higher in January-June 2018 than in January-June 2017.

Table III-9
Wind towers: U.S. producers' employment-related data, 2012-17, January-June 2017, and January-June 2018

Item	Calendar year						January-June	
	2012	2013	2014	2015	2016	2017	2017	2018
Production and related workers (PRWs) (number)	1,386	1,543	2,017	2,140	2,254	2,317	2,407	2,153
Total hours worked (1,000 hours)	2,673	2,611	3,474	3,636	3,745	4,099	2,204	1,821
Hours worked per PRW (hours)	1,929	1,692	1,722	1,699	1,661	1,769	916	846
Wages paid ($1,000)	76,502	97,775	131,254	134,560	145,474	152,633	81,017	70,587
Hourly wages (dollars per hour)	$28.62	$37.45	$37.78	$37.01	$38.84	$37.24	$36.76	$38.76
Productivity (units per 1,000 hours)	0.6	0.6	0.7	0.8	0.8	0.7	0.7	0.7
Unit labor costs (dollars per unit)	$48,914	$67,292	$54,872	$49,344	$47,386	$54,904	$54,778	$55,933

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

FINANCIAL EXPERIENCE OF U.S. PRODUCERS

Background

Seven U.S. producers (Broadwind, GRI Towers, Marmen, T Bailey, Trinity, Ventower, and Vestas) reported usable financial results on their wind tower operations.[1] [2]

As presented in this section of the report, the financial results of the U.S. industry reflect the entry and exit of several producers. Additionally, there were changes in the ownership of wind tower production facilities, several of which are no longer producing wind towers or currently idled, as well as capacity expansions.[3] As described below, the initiation of wind tower production operations by GRI Towers, Marmen, and Ventower reflects start-up activity, which generally explains ***. On November 1, 2018, after the period examined, Trinity's wind tower operations, along with several other business segments, were formally spun off to become a new, publicly traded company (Arcosa).[4]

Operations on wind towers

Table III-10 presents income-and-loss data for the U.S. producers' operations on wind towers for the period 2012 through January-June 2018. Table III-11 presents corresponding changes in average unit values. Table III-12 presents company-specific financial information.[5]

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[1] ***. USITC auditor notes. ***.

[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] In 2010 and prior to initiating wind tower production, Broadwind recognized a $13.3 million impairment related to its Brandon, South Dakota facility (Broadwind 2010 10-K, p. 15), which subsequently remained a non-operating plant until purchased by Marmen in 2013. *Canadian Wind Tower Manufacturer Launches First US Plant*, www.industryweek.com/expansion-management/canadian-wind, retrieved November 20, 2018. In late 2012, Katana's Columbus, Nebraska facility was sold to Valmont, a manufacturer of engineered products for infrastructure and irrigation, which repurposed the plant to produce steel transmission structures for utilities. *Valmont buys Katana Summit plant*, https://journalstar.com/business/local/valmont-buys-katana-summ, retrieved November 20, 2018. ***. *** U.S. producer questionnaire, response to II-2a.

[4] Arcosa 2018 10-Q (Q3), p. 7. During the period examined, Trinity's wind tower operations were part of the company's Energy Equipment Group segment. Trinity 2017 10-K, p. 62.

[5] The Commission's variance analysis is generally more meaningful when product mix remains the same throughout the period. In addition to company-specific changes in product mix, as noted below, the U.S. industry's average sales value also reflects the impact of changes in company-specific market share. Because its utility under these circumstances appears limited, a variance analysis is not presented.

Table III-10
Wind towers: Results of operations of U.S. producers, 2012-17, January-June 2017, and January-June 2018

Item	Calendar year						January to June	
	2012	2013	2014	2015	2016	2017	2017	2018
	Quantity (towers)							
Commercial sales	997	1,304	1,786	1,631	1,971	1,585	996	867
Transfers to related firms	550	178	526	1,041	1,127	1,073	458	478
Total net sales	1,547	1,482	2,312	2,672	3,098	2,658	1,454	1,345
	Value (1,000 dollars)							
Commercial sales	386,639	426,214	662,459	611,354	694,586	562,620	352,642	302,607
Transfers to related firms	274,392	77,418	251,877	381,646	303,857	272,950	119,600	133,255
Total net sales	661,031	503,632	914,336	993,000	998,443	835,570	472,242	435,862
Cost of goods sold.-- Raw materials	519,832	348,048	599,580	683,529	623,356	489,784	287,750	279,660
Direct labor	30,238	38,566	63,355	78,786	88,953	91,715	48,719	43,540
Other factory costs	68,707	76,091	91,258	103,421	120,000	120,306	65,092	59,603
Total COGS	618,777	462,705	754,193	865,736	832,309	701,805	401,561	382,803
Gross profit	42,254	40,927	160,143	127,264	166,134	133,765	70,681	53,059
SG&A expense	22,881	21,015	27,098	26,074	26,367	28,004	14,104	13,698
Operating income or (loss)	19,373	19,912	133,045	101,190	139,767	105,761	56,577	39,361
Interest expense	7,680	3,901	6,717	11,241	7,210	7,359	4,502	3,713
All other expenses	16,380	52,519	7,857	(16,062)	14,531	18,904	8,989	9,846
All other income	925	4,351	402	1,296	1,040	409	16	198
Net income or (loss)	(3,762)	(32,157)	118,873	107,307	119,066	79,907	43,102	26,000
Dep./amortization	27,005	21,405	19,876	21,436	28,757	40,715	19,243	22,525
Estimated cash flow	23,243	(10,752)	138,749	128,743	147,823	120,622	62,345	48,525
	Ratio to total net sales (percent)							
Cost of goods sold.-- Raw materials	78.6	69.1	65.6	68.8	62.4	58.6	60.9	64.2
Direct labor	4.6	7.7	6.9	7.9	8.9	11.0	10.3	10.0
Other factory costs	10.4	15.1	10.0	10.4	12.0	14.4	13.8	13.7
Total COGS	93.6	91.9	82.5	87.2	83.4	84.0	85.0	87.8
Gross profit	6.4	8.1	17.5	12.8	16.6	16.0	15.0	12.2
SG&A expense	3.5	4.2	3.0	2.6	2.6	3.4	3.0	3.1
Operating income or (loss)	2.9	4.0	14.6	10.2	14.0	12.7	12.0	9.0
Net income or (loss)	(0.6)	(6.4)	13.0	10.8	11.9	9.6	9.1	6.0
	Ratio to total COGS (percent)							
Cost of goods sold.-- Raw materials	84.0	75.2	79.5	79.0	74.9	69.8	71.7	73.1
Direct labor	4.9	8.3	8.4	9.1	10.7	13.1	12.1	11.4
Other factory costs	11.1	16.4	12.1	11.9	14.4	17.1	16.2	15.6

Table continued on next page.

Table III-10—Continued
Wind towers: Results of operations of U.S. producers, 2012-17, January-June 2017, and January-June 2018

Item	Calendar year						January to June	
	2012	2013	2014	2015	2016	2017	2017	2018
	Average value (per tower)							
Commercial sales	387,802	326,851	370,918	374,834	352,403	354,965	354,058	349,028
Transfers to related firms	498,895	434,933	478,854	366,615	269,616	254,380	261,135	278,776
Total net sales	427,299	339,833	395,474	371,632	322,286	314,360	324,788	324,061
Cost of goods sold.-- Raw materials	336,026	234,850	259,334	255,812	201,212	184,268	197,902	207,926
Direct labor	19,546	26,023	27,403	29,486	28,713	34,505	33,507	32,372
Other factory costs	44,413	51,343	39,471	38,705	38,735	45,262	44,768	44,314
Total COGS	399,985	312,217	326,208	324,003	268,660	264,035	276,177	284,612
Gross profit	27,314	27,616	69,266	47,629	53,626	50,325	48,611	39,449
SG&A expense	14,791	14,180	11,721	9,758	8,511	10,536	9,700	10,184
Operating income or (loss)	12,523	13,436	57,545	37,871	45,115	39,790	38,911	29,265
Net income or (loss)	(2,432)	(21,698)	51,416	40,160	38,433	30,063	29,644	19,331
	Number of firms reporting							
Operating losses	2	3	---	---	---	2	2	2
Net losses	2	3	---	---	---	2	3	3
Data	5	5	5	5	5	6	6	6

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

Table III-11
Wind towers: Changes in the U.S. producers' average unit values reported for operations 2012-17, January-June 2017, and January-June 2018

Item	Between calendar years						Between partial periods, January-June
	2012-17	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
	Changes in AUVs (dollars per tower)						
Average commercial sales	(32,837)	(60,951)	44,066	3,916	(22,431)	2,562	(5,031)
Transfers to related firms	(244,514)	(63,962)	43,921	(112,239)	(96,999)	(15,236)	17,641
Average sales value	(112,938)	(87,466)	55,641	(23,842)	(49,345)	(7,926)	(727)
Cost of goods sold: Raw materials	(151,758)	(101,176)	24,484	(3,522)	(54,599)	(16,945)	10,023
Direct labor	14,959	6,477	1,380	2,083	(773)	5,792	(1,135)
Other factory costs	849	6,930	(11,872)	(766)	29	6,527	(453)
Total COGS	(135,950)	(87,769)	13,991	(2,205)	(55,343)	(4,625)	8,435
Gross profit	23,012	303	41,650	(21,637)	5,997	(3,301)	(9,162)
SG&A expense	(4,255)	(610)	(2,460)	(1,962)	(1,247)	2,025	484
Operating income or (loss)	27,267	913	44,110	(19,675)	7,245	(5,326)	(9,647)
Net income or (loss)	32,495	(19,267)	73,114	(11,256)	(1,727)	(8,370)	(10,313)

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

Table III-12
Wind towers: Results of operations of U.S. producers' operations, by firm, 2012-17, January-June 2017, and January-June 2018

* * * * * * *

Revenue

Wind tower revenue presented in this section of the report reflects commercial sales and transfers. ***.[6] [7]

Volume

Total revenue increased on a volume basis throughout most of the full-year period, reaching its highest annual level in 2016, declining in 2017, and then was lower in January-June 2018 compared with January-June 2017. New entrants as well as established U.S. producers contributed to this pattern with *** U.S. producers reporting their highest level of annual sales volume in 2016 followed by declines in 2017 of varying magnitudes. The directional pattern of sales volume between the interim periods, in contrast, was mixed on a company-specific basis.

*** stated that the decline in its 2017 sales volume reflects the ***.[8] ***.[9] Broadwind, whose total sales volume declined by *** percent in 2017, attributed this to customer consolidation in that year.[10] ***, which reported the largest company-specific percentage decline in 2017 sales volume (*** percent), stated that this reflects the ***.[11] ***.[12]

As shown in table III-12, most new entrants registered relatively modest increases in market share from initial start-up levels. The exception was ***, whose market share increased notably during the course of the period. *** total market share *** and then declined. *** market share, which declined in 2013, subsequently increased and then surpassed *** market share in 2015 and remained the highest on a company-specific basis throughout the rest of the full-year period. *** market share declined *** at the end of the period.

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[6] ***. *** response to USITC auditor follow up questions, December 11, 2018.

[7] As a share of total wind tower revenue presented in this section of the report, *** accounted for the largest company-specific shares on a value basis (*** percent and *** percent, respectively), followed by *** (*** percent, *** (*** percent), *** (*** percent) *** (*** percent), and *** (*** percent).

[8] ***. Email with attachment from *** to USITC auditor, November 16, 2018.

[9] ***. Email with attachment from *** to USITC auditor, November 9, 2018.

[10] As described publicly by Broadwind, "In 2016, orders for our wind towers were strong, driven by a multi-year baseload order received in response to the PTC {production tax credit} extension. Our orders weakened in 2017 due principally to the consolidation of our two largest customers, and their decision to reduce inventories of towers and other turbine components globally." Broadwind 2017 10-K, p. 4. With respect to first half 2018, Broadwind noted ". . . a 24% decrease in tower sections sold and a lower average sales price on the product mix sold." Broadwind 2018 10-Q (Q2), p. 22.

[11] ***. Email with attachments from *** to USITC auditor and investigator, November 16, 2018.

[12] *** response to USITC auditor follow up questions, December 11, 2018.

Value

Table III-12 shows that company-specific average sales values covered a relatively wide range, which in turn generally indicates differences in product mix among the U.S. producers.[13] While U.S. producers indicated that primary raw material inputs are generally passed through in negotiated sales values, the extent of direct pass-through can vary by customer and input.[14] [15] [16] [17] Table III-11 shows that changes in average sales value and corresponding raw material cost were directionally the same for only parts of the period.

*** indicated that wind tower product mix shifted somewhat to larger towers during the period.[18] In contrast, changes in product mix varied among the smaller-volume producers: *** indicated a modest shift in product mix to larger and heavier towers,[19] *** indicated no change in product mix.[20] *** also indicated that its product mix did not change substantially.

Cost of goods sold

Raw material

Raw material cost accounts for the single largest component of wind tower cost of goods sold (COGS) ranging from 69.8 percent to 84.0 percent over the period for which data were collected. While a large share of total raw material costs reflects carbon steel plate, other identified material input costs include flanges and internal components.[21] As noted above, product mix for a number of U.S. producers reportedly shifted during the period to some extent to larger (taller and heavier) towers.[22]

Table III-12 shows that directional changes in company-specific average raw material costs were uniform during parts of the period and mixed during others. Consistent with statements that underlying input costs increased toward the end of the period,[23] most U.S. producers

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[13] *** alternated in terms of reporting the highest company-specific average sales value. *** reported the lowest average sales value for almost the entire period.

[14] ***. Email with attachment from *** to USITC auditor, November 16, 2018.

[15] ***. Email with attachment from *** to USITC auditor, November 16, 2018.

[16] ***. Email with attachment from *** to USITC auditor, November 9, 2018.

[17] ***. *** response to USITC auditor follow up questions, December 11, 2018.

[18] ***. Email with attachment from *** to USITC auditor, November 16, 2018. Email with attachment from *** to USITC auditor, November 16, 2018. ***. *** response to USITC auditor follow up questions, December 11, 2018.

[19] Email with attachments from *** to USITC auditor and USITC investigator, November 16, 2018.

[20] ***. Email with attachment from *** to USITC auditor, November 16, 2018.

[21] ***. Email with attachment from *** to USITC auditor, November 16, 2018. ***. Email with attachment from *** to USITC auditor, November 16, 2018. ***. Email with attachment from *** to USITC auditor, November 16, 2018.

[22] ***. Email with attachment from *** to USITC auditor, November 16, 2018.

[23] ***. Email with attachments from *** to USITC auditor and USITC investigator, November 16, 2018. ***. *** response to USITC auditor follow up questions, December 11, 2018.

reported higher average raw material costs in January-June 2018 compared with January-June 2017 (see table III-12).

Conversion costs (direct labor and other factory costs)

The second largest component of COGS is other factory costs (ranging from 11.1 percent to 17.1 percent of total COGS) followed by direct labor (ranging from 4.9 percent to 13.1 percent). When considered together, conversion costs (combined direct labor and other factory costs) ranged from 16.0 percent to 30.2 percent of total COGS.

A range of company-specific average direct labor and other factory costs were reported by U.S. producers (see table III-12) with notably higher company-specific levels generally reflecting the ***.[24] In some instances, differences in the level of average direct labor appears to reflect the manner in which costs were assigned; e.g., *** lower average direct labor likely signifies that it is reporting some costs as other factory costs that other U.S. producers are reporting as direct labor. Some company-specific conversion costs also include non-recurring items.[25]

While directional patterns were mixed, most U.S. producers reported higher average conversion costs in 2017 compared to 2016, which is generally consistent with reduced overall production and sales in that year. ***, for example, confirmed that its higher average conversion cost in 2017 reflects lower production and sales volume.[26] In contrast, and while *** production and sales volumes were also lower in 2017, the company's average conversion cost declined somewhat.[27]

Gross profit or loss

In their description of the pass-through of raw material costs noted above, U.S. producers generally indicated that conversion pricing is an important component of wind tower sales values; i.e., to the extent that material input costs are a neutral factor, reductions in gross profit ratios generally reflect pressure on U.S. producers' conversion margins.[28] Despite the pass-

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Several months after the end of the period examined, Broadwind noted its early September 2018 ". . . decision to slow down our tower production mid-quarter because of a delay in obtaining steel to meet the scheduled production mix . . . Steel tariffs are continuing to present operating challenges for towers and are causing cost escalation for our other businesses with high steel content. We and the rest of our industry are adjusting to the higher prices, and we expect something closer to business as usual next year." Broadwind 2018 Q3 earnings call, p. 1.

[24] ***. Email with attachment from *** to USITC auditor, November 9, 2018.

[25] ***. Email with attachment from *** to USITC auditor, November 16, 2018.

[26] ***. Email with attachment from *** to USITC auditor, November 16, 2018. ***. Ibid.

[27] ***. Email with attachments from *** to USITC auditor and USITC investigator, November 16, 2018.

[28] ***. Email with attachment from *** to USITC auditor, November 16, 2018. ***. Email with attachment from *** to USITC auditor November 16, 2018. ***. Email with attachments from *** to USITC auditor and USITC investigator, November 16, 2018.

through of raw material costs in a number of instances, it was noted that higher input costs impact price competiveness in general.[29]

Table III-12 shows that, with the exception of ***, the majority of U.S. producers reported gross profit for all or most of the period that they had operations with ***. ***.[30] ***.[31] ***.[32]

Among the established producers, *** reported a substantial improvement in its gross profit ratio, which began the period in the ***. The company's gross profit ratio *** in 2016 and subsequently declined but remained relatively high compared to most other U.S. producers.[33] *** reported somewhat lower gross profit ratios compared to *** and, in conjunction with lower sales and production in January-June 2018 compared to January-June 2017, a substantial decline in its gross profit ratio at the end of the period.[34] *** reported a gross loss in *** followed by increasing gross profit ratios throughout most of the period. As described in footnote 35, ***, which is reported as other expenses below operating results.

SG&A expenses and operating income or loss

The U.S. industry's total SG&A expenses increased irregularly during the full-year period, reaching their highest level in 2017, and then were lower in January-June 2018 compared to January-June 2017. While fluctuating somewhat, the U.S. industry's SG&A expense ratios (total SG&A expenses divided by total revenue) remained within a relatively narrow range throughout the period. On a company-specific basis (see table III-12), the *** reported SG&A expense ratios that were similar throughout the period. For ***, higher SG&A expense ratios generally reflect declines in corresponding revenue, as opposed to increases in SG&A expenses. ***.

In conjunction with *** reported SG&A expense ratios that were initially high and then subsequently declined. The large increase in *** 2017 and interim period SG&A expense ratios generally reflects lower revenue levels; i.e., *** total SG&A expenses declined in 2017 compared to 2018 and were also somewhat lower in January-June 2018 compared with January-June 2017.

After reaching its highest level in 2013, full-year declines in the U.S. industry's SG&A expense ratios, reflecting, in large part, relatively stable total SG&A expenses and increasing total revenue through 2016, amplified the positive effect of expanding gross profit ratios. Higher SG&A expense ratios in 2017 and January-June 2018, in turn, modestly amplified the negative effect of lower gross profit ratios. Given the relatively modest range covered by SG&A expense ratios, the pattern of the U.S. industry's operating results is largely explained at the gross level of financial results.

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[29] ***. Email with attachment from *** to USITC auditor, November 16, 2018.

[30] ***. Ibid. ***. Ibid.

[31] ***. Email with attachments from *** to USITC auditor and USITC investigator, November 16, 2018.

[32] Email with attachment from *** to USITC auditor, November 9, 2018.

[33] ***. Email with attachment from *** to USITC auditor November 16, 2018.

[34] ***.

Interest expense, other expenses, and net income or loss

***, which did not report any interest expense, *** U.S. producers reported some interest expense during the period examined with *** accounting for the largest company-specific share. In contrast, *** U.S. producers reported other expenses and other income with *** and *** accounting for the largest company-specific shares, respectively.[35]

Table III-10 shows that, while the absolute difference between the U.S. industry's operating and net results narrowed and widened in conjunction with changes in total interest expense and net other income and expenses, operating and net results followed the same directional trend throughout the period.

Capital expenditures and research and development expenses

Table III-13 presents the U.S. producers' capital expenditures and research and development (R&D) expenses related to wind tower operations.

Table III-13
Wind towers: Capital expenditures and research and development (R&D) expenses of U.S. producers, by firm, 2012-17, January-June 2017, and January-June 2018

	Calendar year						January to June	
	2012	2013	2014	2015	2016	2017	2017	2018
Item	Capital expenditures (1,000 dollars)							
Broadwind	***	***	***	***	***	***	***	***
GRI Towers	***	***	***	***	***	***	***	***
Marmen	***	***	***	***	***	***	***	***
T Bailey	***	***	***	***	***	***	***	***
Trinity	***	***	***	***	***	***	***	***
Ventower	***	***	***	***	***	***	***	***
Vestas	***	***	***	***	***	***	***	***
Total capital expenditures	4,340	43,339	26,718	11,166	71,925	41,113	22,182	11,033
	Research and development expenses (1,000 dollars)							
Broadwind	***	***	***	***	***	***	***	***
GRI Towers	***	***	***	***	***	***	***	***
Marmen	***	***	***	***	***	***	***	***
T Bailey	***	***	***	***	***	***	***	***
Trinity	***	***	***	***	***	***	***	***
Ventower	***	***	***	***	***	***	***	***
Vestas	***	***	***	***	***	***	***	***
Total R&D expenses	***	***	***	***	***	***	***	***

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

[35] ***. *** response to USITC auditor follow up questions, December 11, 2018. ***. *** U.S. producer questionnaire, response to III-10.

The U.S. industry's total capital expenditures fluctuated during the period and were at higher levels in 2013 and 2016, which primarily reflect the ***, respectively.[36] In 2017, a large share of total capital expenditures reflects *** and ***.[37] As a share of the U.S. industry's total reported capital expenditures, *** accounted for the largest company-specific share (*** percent), followed by *** (*** percent), *** (*** percent), *** (*** percent), *** (*** percent), and *** (*** percent). ***, which exited the market at the beginning of the period, *** capital expenditures.

R&D expenses were reported by ***, which reported that they represent ***.[38]

Assets and return on assets

Table III-14 presents U.S. producers' total assets and operating return on net assets.[39]

Table III-14
Wind towers: Total net assets and operating return on net assets of U.S. producers, by firm, 2012-17

Firm	Calendar year					
	2012	2013	2014	2015	2016	2017
	Total net assets (1,000 dollars)					
Broadwind	***	***	***	***	***	***
GRI Towers	***	***	***	***	***	***
Marmen	***	***	***	***	***	***
T Bailey	***	***	***	***	***	***
Trinity	***	***	***	***	***	***
Ventower	***	***	***	***	***	***
Vestas	***	***	***	***	***	***
Total net assets	355,566	325,754	296,314	302,540	318,495	363,915
	Operating return on assets (percent)					
Broadwind	***	***	***	***	***	***
GRI Towers	***	***	***	***	***	***
Marmen	***	***	***	***	***	***
T Bailey	***	***	***	***	***	***
Trinity	***	***	***	***	***	***
Ventower	***	***	***	***	***	***
Vestas	***	***	***	***	***	***
Average operating return on assets	5.4	6.1	44.9	33.4	43.9	29.1

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

[36] ***. Email with attachment from *** to USITC auditor, November 9, 2018.

[37] Email with attachment from *** to USITC auditor, November 16, 2018. *** response to USITC auditor follow up questions, December 11, 2018.

[38] *** U.S. producer questionnaire, response to III-13 (note 2).

[39] 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. The ability of U.S. producers to assign total asset values to discrete product lines affects the meaningfulness of calculated operating return on net assets.

PART IV: U.S. IMPORTS AND THE FOREIGN INDUSTRIES

U.S. IMPORTS

Overview

The Commission issued questionnaires to 40 firms believed to have imported wind towers between 2012 and June 2018. Six firms provided data and information in response to the questionnaires, while 12 firms indicated that they had not imported wind towers since January 1, 2012. Importers' questionnaire data are believed to account for all U.S. imports of wind towers during the period for which data were collected. Import data in this report are based on data submitted in the importers' questionnaires.

Imports from subject and nonsubject countries

Table IV-1 and figure IV-1 present information on U.S. imports of wind towers from China, Vietnam, and all other sources over the period examined. Total U.S. imports, by quantity, decreased overall by 54.7 percent between 2012 and 2017. U.S. imports of wind towers from China decreased by *** percent between 2012 and 2014, and were not present in 2015-17, nor the first six months of 2018. There were no subject imports from Vietnam during the period for which data were collected. Imports from nonsubject sources, including CS Wind from Vietnam,[1] increased by *** percent during 2012-17, and were *** percent higher in January-June 2018 than in January-June 2017. Import sources other than China and Vietnam included Canada, Denmark, Egypt, Indonesia, Italy, Korea, Mexico, and Spain.[2]

[1] On March 24, 2017, Commerce published notice that merchandise produced and exported by CS Wind was excluded from the antidumping duty order on Vietnam.

[2] Based on official import statistics, which contains out-of-scope products,

Table IV-1
Wind towers: U.S. imports by source, 2012-17, January-June 2017, and January-June 2018

Item	Calendar year						January-June	
	2012	2013	2014	2015	2016	2017	2017	2018
	Quantity (units)							
U.S. imports from.--China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	2,581	***	1,026	1,331	1,306	1,170	653	***
	Value (1,000 dollars)							
U.S. imports from.--China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	736,407	***	238,283	309,425	308,511	211,224	125,729	***
	Unit value (dollars per unit)							
U.S. imports from.--China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	285,318	***	232,245	232,476	236,226	180,533	192,541	***

Table continued on next page.

Table IV-1—Continued
Wind towers: U.S. imports, by source, 2012-17, January-June 2017, and January-June 2018

Item	Calendar year						January-June	
	2012	2013	2014	2015	2016	2017	2017	2018
	Share of quantity (percent)							
U.S. imports from.-- China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***
	Share of value (percent)							
U.S. imports from.-- China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***
	Ratio to U.S. production (percent)							
U.S. imports from.-- China	***	***	***	***	***	***	***	***
Vietnam subject	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	165.0	***	42.9	48.8	42.5	42.1	44.2	***

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

Figure IV-1

Wind towers: U.S. import volumes and average unit values, 2012-17, January-June 2017, and January-June 2018

* * * * * * *

CUMULATION CONSIDERATIONS

In assessing whether U.S. imports from the subject countries are likely to compete with each other and with the domestic like product, the Commission 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. Additional information concerning geographical markets and simultaneous presence in the market is presented below.

Geographical markets

Based on official import statistics, the majority of subject imports from China, entered Houston-Galveston, Texas, New Orleans, Louisiana, and Columbia-Snake, Oregon. There were no subject imports from Vietnam during the period for which data were collected.

Presence in the market

According to official import statistics, subject imports from China were present in each month except in December 2012, February and September 2014, and many months in 2016. Subject imports from Vietnam were not present in any month between January 2012 and June 2018.

U.S. IMPORTERS' IMPORTS SUBSEQUENT TO JUNE 30, 2018

The Commission requested importers to indicate whether they had imported or arranged for the importation of wind towers from China, Vietnam, or other sources for delivery after June 30, 2018. Two of six responding firms, ***, reported such imports, which are presented in table IV-2.

Table IV-2
Wind towers: U.S. importers' arranged imports

* * * * * * *

U.S. IMPORTERS' INVENTORIES

The six responding firms did not report any inventories during the period for which data were collected.

THE INDUSTRY IN CHINA

During the final phase of the original investigations, the Commission received foreign producer/exporter questionnaires from five firms, which accounted for approximately *** percent of production of wind towers in China in 2011, and approximately *** percent of exports of wind towers from China to the United States in 2011.[3] No Chinese producer of wind towers submitted a response to the Commission's questionnaire in these current reviews.

Wind turbine installations in China increased from 16.1 GW in 2013 to 30.8 GW in 2015, then declined to 19.7 GW in 2017 (figure IV-2).[4] According to initial estimates, China installed 23 GW in 2018, of which 21.2 GW was installed onshore and 1.8 GW was installed offshore. China had both the largest onshore and offshore markets in 2018.[5] Make Consulting forecasted that installations in China will average more than 20 GW a year during 2018–2027.[6] *** projected that installations will total *** in 2019, *** in 2020, *** in 2021, and *** in 2022.[7] *** forecasted installations *** in 2019 and 2020, then *** during 2021–27.[8] *** projected that installations will total *** in 2019, *** in 2020, *** in 2021, and *** in 2022.[9]

Chinese installation data also serve as a rough proxy for Chinese production for the domestic market, as China was not a major importer of wind towers.[10] Based on these data, the number of wind towers produced for the domestic market increased from approximately 13,100 in 2014 to 16,700 in 2015, then declined to approximately 12,000 towers in 2016.[11] In 2017, the number of wind towers installed in China totaled 9,300.[12] Production capacity in China for firms where capacity could be identified are included in figure IV-3, and profiles of five significant Chinese producers are included below.

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[3] *Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final): Utility Scale Wind Towers from China and Vietnam—Staff Report*, INV-LL-002, January 7, 2013, p. VII-5.

[4] GWEC, Global Wind 2016 Report, 2017, p. 37, http://files.gwec.net/files/GWR2016.pdf; CWEA Website, http://www.cwea.org.cn/industry_data.html, retrieved March 9, 2019.

[5] GWEC, "51.3 GW of Global Wind Capacity Installed in 2018," News release, February 26, 2019, https://gwec.net/51-3-gw-of-global-wind-capacity-installed-in-2018/, retrieved March 9, 2019.

[6] Richard, Craig, "Auctions to Boost China's Annual Growth," July 30, 2018, https://www.windpowermonthly.com/article/1489097/auctions-boost-chinas-annual-growth, retrieved March 15, 2019.

[7] ***.

[8] ***.

[9] ***.

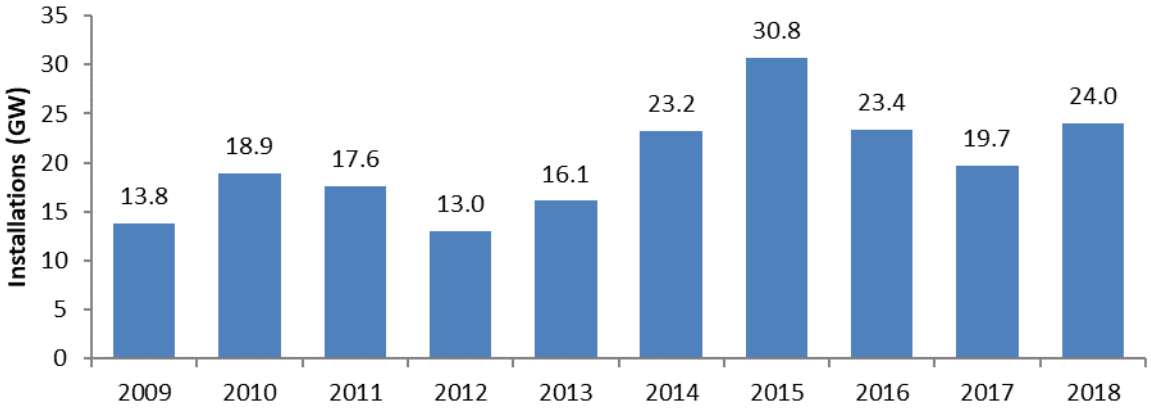
[10] IHS Market, Global Trade Atlas, HS subheading 7308.20.

[11] Installations in MW divided by average wind turbine size. China Wind Energy Association Website, http://www.cwea.org.cn/industry_data.html and http://www.cwea.org.cn/industry_data_2015.html, retrieved February 16, 2018; GWEC, *Global Wind 2017 Report*, April 2018, pp. 31 and 40, http://files.gwec.net/register?file=/files/GWR2017.pdf, retrieved February 6, 2019.

[12] CWEA Website, http://www.cwea.org.cn/industry_data.html, retrieved March 9, 2019.

Figure IV-2

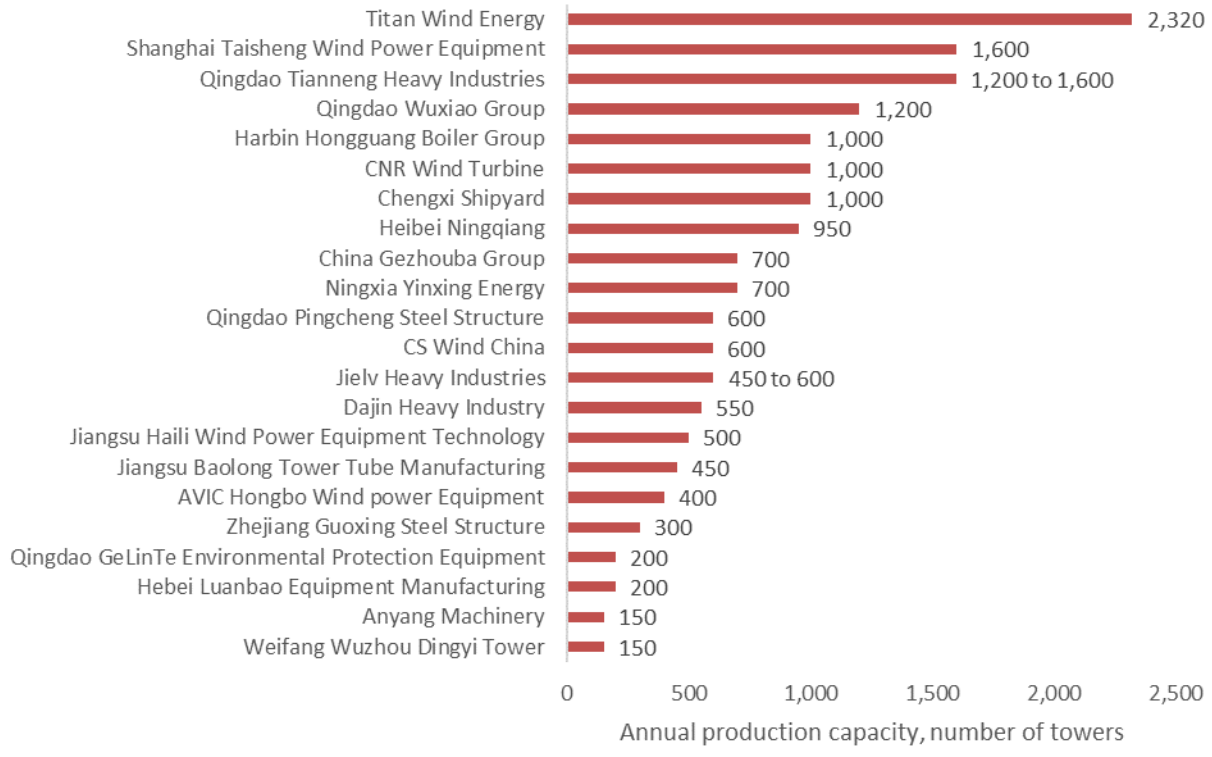
Wind towers: Annual wind turbine capacity additions in China, 2009–17, in GW



Source: GWEC, *Global Wind 2016 Report*, 2017, p. 37, http://files.gwec.net/files/GWR2016.pdf; CWEA Website, http://www.cwea.org.cn/industry_data.html, retrieved March 9, 2019; GWEC, "51.3 GW of Global Wind Capacity Installed in 2018," News release, February 26, 2019, https://gwec.net/51-3-gw-of-global-wind-capacity-installed-in-2018/, retrieved March 9, 2019.

Figure IV-3

Wind towers: Annual wind tower production capacity in China, number of towers, first quarter 2019



Notes continued on next page.

Note.--Only includes firms for which production or production capacity could be identified. For several firms (Weifang, Anyang, and two Heibei Ningqiang plants), production/production capacity by weight was converted to units using 132,449 kg per unit for onshore wind turbines and 200,000 kg per unit for offshore wind turbines. For one firm (Titan's offshore tower plant), production capacity in terms of tower sections was converted to number of towers using 3 sections per tower. China Gezhouba Group is an active wind tower producer, but production capacity data are from prior to 2013. For Anyang and Dajin, data are estimated annual production rather than capacity. In the case of Anyang, this is the total tons of production, including non-wind products, converted to number of wind towers. For Dajin, it is 2016 wind tower revenue divided by the average unit value of exports. Estimated values were rounded down to the nearest five towers.

Source: Compiled from company websites and documents.

CS Wind China

CS Wind China[13] has an annual production capacity of 600 towers per year. The firm has supplied OEMs such as GE, Siemens-Gamesa, and Vestas, and exported from China to the United States, Africa, Asia, and Europe.[14] However, the firm did not deliver any towers from China to the United States in 2017.[15]

Titan Wind Energy

Titan Wind Energy has five factories in China,[16] with a combined annual production capacity for onshore wind of 1,800 towers per year. In addition, the firm can produce 30 offshore wind tower sections per week.[17] The firm can produce towers for more than a dozen OEMs including GE, Siemens-Gamesa, and Vestas.[18] For example, Titan supplied Vestas in Australia during January 2017 to June 2018, and ***.[19]

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[13] The firm is a subsidiary of CS Wind, which also has production in Canada, Malaysia, Turkey, the United Kingdom, and Vietnam. CS Wind Website, http://www.cswind.com/eng/?page=company|location|cswind_china, retrieved November 29, 2018.

[14] CS Wind Website, http://www.cswind.com/eng/?page=company|location|cswind_china, retrieved November 29, 2018.

[15] CS Wind Website, http://www.cswind.com/eng/?page=company|historesult|result, retrieved November 29, 2018.

[16] The firm also has a plant in Denmark, and is construction a factory in India. Annual production capacity in Denmark is 1,080 sections. Titan Wind Energy, http://www.titanwind.com.cn/en/product/4.html and http://www.titanwind.com.cn/en/product/3.html, retrieved November 28, 2018.

[17] Titan Wind Energy Website, http://www.titanwind.com.cn/en/about/tsfn.html and http://www.titanwind.com.cn/en/product/3.html, retrieved November 29, 2018.

[18] Titan Wind Energy Website, http://www.titanwind.com.cn/en/product/2.html, retrieved November 29, 2018.

[19] Australian Government, Anti-Dumping Commission, Verification Visit Report, Vestas Asia Pacific, Continuation Inquiry No. 487, December 2018, p. 5, https://www.adcommission.gov.au/cases/EPR%20451%20%20550/EPR%20487/487-010%20-

(*continued*...)

Chengxi Shipyard Co.

Chengxi Shipyard Co. Ltd. has an annual production capacity of over 1,000 towers per year. OEMs supplied by the firm include GE and Vestas, as well as at least seven China-based OEMs.[20]

Shanghai Taisheng Wind Power Equipment (TSP)

TSP has multiple factories in China, with a total annual capacity of 1,600 towers.[21] The firm has supplied OEMs such as GE, Siemens Gamesa, Vestas, and Goldwind. For example, the firm reached a three-year supply agreement with Vestas in 2012. The firm supplied a Goldwind project in Australia that was completed in 2017, and supplied towers to Vestas in Australia during the period from January 2017 to June 2018. TSP also ***. The firm previously had a plant in Canada, which closed in 2015.[22]

According to an Australian Anti-Dumping Commission report, TSP exported about half of its production during January 2017–June 2018, with a majority of exports going to markets in South America and Asia. The firms utilized less than two-thirds of its production capacity during 2016, but operated at close to full capacity during January 2017-June 2018.[23]

(…*continued*)
%20Verification%20Report%20-%20Importer%20-%20Vestas%20Asia%20Pacific.PDF, retrieved March 25, 2019; ***.

[20] Chengxi Shipyard Co. Ltd. website, http://chengxi.cssc.net.cn/cms_chengxi_en/compay_mod_file/mode_5.php?cart=7&typeid=83, retrieved March 24, 2019.

[21] TSP website, http://www.shtsp.com/en/corporate_profile.html, retrieved November 30, 2018.

[22] TSP website, http://www.shtsp.com/en/market_served.html, retrieved November 30, 2018; TSP Website, http://www.shtsp.com/html/xwzx/qyxw/016565634651.html, retrieved March 25, 2019; White Rock Wind Farm, "White Rock Wind Farm Switches on Turbines," July 10, 2017, http://www.whiterockwindfarm.com/wp-content/uploads/2017/07/media-release-WRWF-switches-on-turbines.pdf, retrieved March 25, 2019; Australian Manufacturing, "Keppel Prince Engineering Wins $14m Tower Supply Contract for White Rock Wind Farm," Australian Manufacturing, November 7, 2016, http://www.australianmanufacturing.com.au/41440/keppel-prince-engineering-wins-14m-tower-supply-contract-for-white-rock-wind-farm, retrieved March 25, 2019; Australian Government, Anti-Dumping Commission, Verification Visit Report, Vestas Asia Pacific, Continuation Inquiry No. 487, December 2018, p. 5, https://www.adcommission.gov.au/cases/EPR%20451%20%20550/EPR%20487/487-010%20-%20Verification%20Report%20-%20Importer%20-%20Vestas%20Asia%20Pacific.PDF, retrieved March 25, 2019; Niagara Falls Review, "Company Fined for Thorold Turbine Plant Injury," October 11, 2016, https://www.niagarafallsreview.ca/news-story/8190786-company-fined-for-thorold-turbine-plant-injury/, retrieved March 25, 2019; ***.

[23] Australian Government, Anti-Dumping Commission, Statement of Essential Facts No. 487, Inquiry into the Continuation of Anti-Dumping Measures Applying to Wind Towers Exported to Australia from the People's Republic of China and the Republic of Korea, January 5, 2019, pp. 39–40, https://www.adcommission.gov.au/cases/EPR%20451%20%20550/EPR%20487/487-014%20-

(*continued*...)

Exports

According to GTA, the leading export markets for towers and lattice masts (HS 7308.20), which includes wind towers if traded separately from the wind turbine, from China are Pakistan and Germany (table IV-3), accounting for 16.8 percent and 15.1 percent in 2017, respectively.

Table IV-3
Towers and lattice masts: Exports from China, 2012-17

Item	Calendar year					
	2012	2013	2014	2015	2016	2017
	Quantity (units)					
China's exports to the United States	1,510	63	25	23	6	9
China's exports to other major destination markets.--						
Pakistan	54	78	160	342	185	571
Germany	26	201	237	345	423	511
Denmark	3	2	2	19	105	325
Philippines	96	100	106	164	141	282
Australia	---	---	---	21	41	241
Canada	60	104	33	40	48	144
Belarus	---	1	1	85	62	111
Korea	2	0	0	1	3	91
All other destination markets	1,757	2,371	2,583	2,231	1,923	1,103
Total exports from China	3,507	2,920	3,148	3,270	2,937	3,387
	Value (1,000 dollars)					
China's exports to the United States	408,114	13,425	7,848	9,621	1,670	2,814
China's exports to other major destination markets.--						
Pakistan	5,837	7,679	21,334	42,637	36,003	94,655
Germany	10,392	51,030	57,799	78,683	82,659	105,681
Denmark	1,572	791	824	4,432	8,487	35,772
Philippines	13,581	11,888	16,480	29,457	27,631	53,663
Australia	31,512	37,686	50,803	10,795	7,929	35,445
Canada	16,764	25,127	12,643	12,507	33,394	29,092
Belarus	---	1,351	181	22,632	23,054	39,353
Korea	923	32	201	161	735	19,047
All other destination markets	477,761	484,790	764,229	592,742	438,497	269,401
Total exports from China	966,456	633,798	932,341	803,668	660,060	684,922

Table continued on next page.

(*…continued*)
%20Report%20-%20Statement%20of%20Essential%20Facts%20SEF%20487.pdf, retrieved March 14, 2019.

Table IV-3—Continued
Towers and lattice masts: Exports from China, 2012-17

Item	Calendar year					
	2012	2013	2014	2015	2016	2017
	Unit value (dollars per unit)					
China's exports to the United States	270,318	214,450	319,057	426,740	256,973	324,244
China's exports to other major destination markets.--						
Pakistan	107,944	98,406	133,488	124,515	194,384	165,870
Germany	406,975	253,331	243,407	227,890	195,609	206,941
Denmark	494,672	344,618	344,279	229,216	80,722	110,211
Philippines	141,342	119,024	155,196	179,876	195,791	190,271
Australia	---	---	---	523,901	195,591	146,788
Canada	278,222	242,425	383,922	315,141	699,513	202,434
Belarus	---	1,443,333	227,754	267,813	371,751	354,700
Korea	608,253	74,092	444,431	257,040	255,669	210,396
All other destination markets	271,956	204,445	295,859	265,633	228,029	244,145
Total exports from China	275,567	217,017	296,196	245,755	224,762	202,237
	Share of quantity (percent)					
China's exports to the United States	43.0	2.1	0.8	0.7	0.2	0.3
China's exports to other major destination markets.--						
Pakistan	1.5	2.7	5.1	10.5	6.3	16.8
Germany	0.7	6.9	7.5	10.6	14.4	15.1
Denmark	0.1	0.1	0.1	0.6	3.6	9.6
Philippines	2.7	3.4	3.4	5.0	4.8	8.3
Australia	---	---	---	0.6	1.4	7.1
Canada	1.7	3.5	1.0	1.2	1.6	4.2
Belarus	---	0.0	0.0	2.6	2.1	3.3
Korea	0.0	0.0	0.0	0.0	0.1	2.7
All other destination markets	50.1	81.2	82.1	68.2	65.5	32.6
Total exports from China	100.0	100.0	100.0	100.0	100.0	100.0

Note.--These data may be understated or overstated as (1) towers exported with the turbine are classified in HS 8502.31, and (2) HTS 7308.20 contains products outside the scope of these reviews.
Note.--Data were converted from kilograms to units by dividing by 132,449.

Source: Official import statistics under HTS subheading 7308.20, as reported by various national statistical agencies in the IHS/GTA database, accessed March 6, 2018.

THE INDUSTRY IN VIETNAM

During the final phase of the original investigations, the Commission received foreign producer/exporter questionnaires from two firms ***, which accounted for the vast majority of production of wind towers in Vietnam during 2011, and for *** exports of wind towers from Vietnam to the United States in 2011.[24] Overall, the Commission identified three producers in Vietnam: CS Wind (Vietnam), Vina Halla Heavy Industries Ltd. ("Vina Halla"), and UBI. These firms had a combined production capacity of 1,600 towers.[25] No Vietnamese producer of wind towers submitted a response to the Commission's questionnaire in these current reviews.

Cumulative wind turbine installations in Vietnam totaled 197 MW as of the end of 2017. Of this, 38 MW were installed in 2017.[26] An additional 92 MW was installed in 2018.[27] The government established a goal of 800 MW of installed wind capacity by 2020, 2,000 MW by 2025, and 6,000 MW by 2030.[28] *** projects that 2019 installations will total ***, 2020 installation ***, 2021 installations ***, and 2022 installations ***.[29]

On March 26, 2017, Commerce published notice that merchandise produced and exported by CS Wind is excluded from the antidumping duty order on Vietnam.[30] CS Wind's

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[24] *Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final): Utility Scale Wind Towers from China and Vietnam—Staff Report*, INV-LL-002, January 7, 2013, p. VII-11.

[25] *Utility Scale Wind Towers from China and Vietnam, Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final),* USITC Publication 4372, February 2013, p. VII-8.

[26] GWEC, *Global Wind 2017 Report*, April 2018, p. 69, http://files.gwec.net/register?file=/files/GWR2017.pdf, retrieved February 6, 2019.

[27] Weston, David, "The 7 Best Performing Wind Markets in 2018," Windpower Monthly, January 7, 2019, https://www.windpowermonthly.com/article/1522140/7-best-performing-wind-markets-2018, retrieved March 10, 2019.

[28] GWEC, *Global Wind 2017 Report*, April 2018, p. 69, http://files.gwec.net/register?file=/files/GWR2017.pdf.

[29] ***.

[30] *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 82 FR 15493, March 26, 2017. 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 AD 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. This determination is currently on appeal. See also *Utility Scale Wind Towers From the Socialist Republic of Vietnam: Notice of Court Decision Not in Harmony With the Final Determination of Less Than Fair Value Investigation and Notice of Amended Final Determination of Investigation*, 80 FR 30211, May 27, 2015; *Utility Scale Wind Towers from the Socialist Republic of Vietnam: Final Results of Antidumping Duty Administrative Review; 2013-2014*, 80 FR 55333, September 15, 2015; and

(*continued*...)

annual production capacity in Vietnam is 900 towers, the same as its publicly reported capacity in the original investigations.[31] Vina Halla's production capacity, as of 2017, was 400 towers and UBI lists its annual production capacity at 300 towers. This is the same as the publicly reported production capacity for these firms in the original investigations.[32]

Exports

According to GTA, the leading export markets of towers and lattice masts (HS 7308.20), which includes wind towers if traded separately from the wind turbine, from Vietnam are Australia and the European Union, particularly Belgium, Ireland, Germany, and France (table IV-4), accounting for 64.2 percent and 27.8 percent in 2017, respectively.

(…*continued*)
Commerce's Issues and Decision Memorandum for the Expedited First Sunset Reviews of the Antidumping Duty Orders on Utility Scale Wind Towers from the People's Republic of China and the Socialist Republic of Vietnam, April 26, 2018, p. 5.

[31] CS Wind Website, http://www.cswind.com/eng/?page=company%7Clocation%7Ccswind_vietnam, retrieved November 29, 2018; *Utility Scale Wind Towers from China and Vietnam, Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final),* USITC Publication 4372, February 2013, p. VII-8.

[32] UBI Tower Website, http://ubitower.vn/en/About-us/Company-Capacity.aspx and http://ubitower.vn/en/Products/Wind-tower.aspx, retrieved December 14, 2018; Halla Energy and Environment brochure (Korean version), p. 32, http://www.hallasanup.com/eng/pr/brochure.php?code=0301, retrieved February 19, 2019; *Utility Scale Wind Towers from China and Vietnam, Investigation Nos. 701-TA-486 and 731-TA-1195-1196 (Final),* USITC Publication 4372, February 2013, p. VII-8.

Table IV-4
Towers and lattice masts: Exports from Vietnam, 2012-17

Item	Calendar year					
	2012	2013	2014	2015	2016	2017
	Quantity (units)					
Vietnam's exports to the United States	217	---	3	---	64	---
Vietnam's exports to other major destination markets.--						
Australia	---	---	---	0	120	207
Belgium	---	---	---	34	39	24
Ireland	---	---	---	---	89	24
Germany	60	---	---	---	---	23
France	---	---	0	---	22	18
Thailand	117	15	19	17	49	11
Korea	9	---	15	---	1	10
Peru	4	3	1	0	0	2
All other destination markets	305	100	158	90	75	2
Total exports from Vietnam	711	118	196	142	458	323
	Value (1,000 dollars)					
Vietnam's exports to the United States	62,953	---	885	---	23,680	---
Vietnam's exports to other major destination markets.--						
Australia	---	17,228	---	9	24,420	35,120
Belgium	---	---	---	8,232	17,047	6,720
Ireland	---	---	---	---	18,374	7,111
Germany	16,906	---	---	---	---	5,207
France	2	---	28	---	5,480	3,450
Thailand	31,273	2,698	3,135	2,280	5,328	1,403
Korea	1,697	---	4,056	---	128	2,185
Peru	1,592	804	559	139	100	651
All other destination markets	103,210	27,992	39,189	27,574	63,213	961
Total exports from Vietnam	217,633	48,722	47,852	38,233	157,770	62,808

Table continued on next page.

Table IV-4—Continued
Towers and lattice masts: Exports from Vietnam, 2012-17

Item	Calendar year					
	2012	2013	2014	2015	2016	2017
	Unit value (dollars per unit)					
Vietnam's exports to the United States	290,642	---	292,936	---	368,022	---
Vietnam's exports to other major destination markets.--						
Australia	---	---	---	55,086	204,199	169,297
Belgium	---	---	---	238,760	439,497	275,271
Ireland	---	---	---	---	207,480	297,659
Germany	283,695	---	---	---	---	221,749
France	---	---	316,028	---	246,103	189,948
Thailand	267,019	176,452	166,751	135,624	109,128	127,128
Korea	190,684	---	265,004	---	205,502	214,245
Peru	396,037	258,797	400,795	484,928	341,583	310,432
All other destination markets	338,625	281,282	248,657	305,815	843,682	394,640
Total exports from Vietnam	306,085	413,205	243,876	269,439	344,318	194,356
	Share of quantity (percent)					
Vietnam's exports to the United States	30.5	---	1.5	---	14.0	---
Vietnam's exports to other major destination markets.--						
Australia	---	---	---	0.1	26.1	64.2
Belgium	---	---	---	24.3	8.5	7.6
Ireland	---	---	---	---	19.3	7.4
Germany	8.4	---	---	---	---	7.3
France	---	---	0.0	---	4.9	5.6
Thailand	16.5	13.0	9.6	11.8	10.7	3.4
Korea	1.3	---	7.8	---	0.1	3.2
Peru	0.6	2.6	0.7	0.2	0.1	0.6
All other destination markets	42.9	84.4	80.3	63.5	16.4	0.8
Total exports from Vietnam	100.0	100.0	100.0	100.0	100.0	100.0

Note.--These data may be understated or overstated as (1) towers exported with the turbine are classified in HS 8502.31, and (2) HTS 7308.20 contains products outside the scope of these reviews.
Note.--Data were converted from kilograms to units by dividing by 132,449.

Source: Official import statistics under HTS subheading 7308.20, using mirror data from the IHS/GTA database, accessed November 2, 2018. Vietnamese export data for 2017 had not been reported as of then.

ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

Australia has initiated multiple antidumping investigations with regard to wind towers. On December 6, 2013, Australia imposed preliminary antidumping duties on wind towers from China and Korea. On April 16, 2014, final antidumping duties with rates of 15.0 to 15.6 percent were imposed for wind tower imports from China and 17.2 to 18.8 percent on wind towers

imported from Korea.[33] On June 8, 2017, Australia initiated an investigation into the alleged dumping of wind towers exported from Vietnam to Australia.[34] According to its February 2018 findings, Australia's Anti-Dumping Commission found that while the goods were exported at dumped prices, "injury to the Australian industry that has been, or may be, caused by those exports is negligible."[35] As a result, the investigation was terminated.[36] On July 16, 2018, Australia initiated an investigation into whether the continuation of the antidumping measures on wind towers from China and Korea is justified.[37] The Anti-Dumping Commission is set to make a recommendation in a report due on or before March 11, 2019.[38] The antidumping measures on China and Korea are set to expire on April 15, 2019.[39]

GLOBAL MARKET

Global installations

Global wind turbine installations increased from 36.0 GW in 2013 to 63.6 GW in 2015, then declined to 52.5 GW in 2017 (table IV-5). The number of wind towers installed *** from an estimated *** towers in 2013 to *** towers in 2015, before *** to *** towers in 2017.[40] Demand in Asia (in terms of MW installed) increased during 2012-15, then declined during 2015-17. North American demand increased in 2013-15 and decreased in 2015-17, but remained below its 2012 peak. Demand in Europe, on the other hand, increased each year during 2013-17. Offshore installations accounted for 4.3 GW of the 52.5 GW (8 percent)

[33] Australian Government, Anti-Dumping Commission, *Alleged Dumping of Wind Towers Exported to Australia from the Socialist Republic of Vietnam*, Termination Report No. 405, February 2018, p. 11.

[34] Ibid., p. 11

[35] Ibid., p. 6

[36] Ibid., p. 6

[37] Australian Government, Anti-Dumping Commission, *Inquiry Concerning the Continuation of Anti-Dumping Measures Applying to Wind Towers Exported to Australia from the People's Republic of China and the Republic of Korea*, Anti-Dumping Notice No. 2018/169, October 2018, p. 1.

[38] Ibid., p. 2.

[39] Australian Government, Anti-Dumping Commission, *Wind Towers Exported from the People's Republic of China and the Republic of Korea Initiation of a Continuation Inquiry into Anti-Dumping Measures*, Anti-Dumping Notice No. 2018/225, July 2018, p. 1.

[40] The number of towers installed is calculated by dividing public information on global wind turbine installations by confidential market data on average wind turbine sizes. GWEC, *Global Wind 2017 Report*, 2018, pp. 17, 21, http://gwec.net/publications/global-wind-report-2/; IEA-ETSAP and IRENA, "Wind Power Technology Brief E07 – March 2016 p. 9; ***.

installed worldwide during 2017.[41] According to initial estimates, 2018 global installations totaled 51.3 GW, of which 46.8 GW was installed onshore and 4.5 GW was installed offshore.[42]

Table IV-5
Wind towers: Global wind installations, 2009–17

Item	2009	2010	2011	2012	2013	2014	2015	2016	2017
	Quantity (Megawatts)								
Asia	15,507	21,481	20,981	15,624	18,252	26,058	33,962	27,721	24,412
Europe	10,660	10,466	10,393	12,862	12,524	12,988	13,831	13,926	16,803
North America	11,008	6,208	8,137	14,807	3,112	7,382	10,829	9,359	7,836
Latin America	471	459	771	1,248	1,240	3,744	3,678	3,078	2,578
Africa/Middle East	251	153	8	131	240	934	953	418	618
Pacific Region	578	294	345	358	655	568	381	140	245
Total	38,475	39,061	40,635	45,030	36,023	51,674	63,634	54,642	52,492
	Quantity (Number of towers)								
Total	***	***	***	***	***	***	***	***	***

Note.--The number of towers is an estimate calculated by dividing installations by the average wind turbine size in that year. The average wind turbine size *** from *** MW in 2009 to *** MW in 2017.

Source: GWEC, *Global Wind 2017 Report*, 2018, pp. 17, 21, http://gwec.net/publications/global-wind-report-2/; IEA-ETSAP and IRENA, "Wind Power Technology Brief E07 – March 2016 p. 9; ***.

GWEC projected that global wind energy installations will total 57.5 GW in 2019, 62.4 GW in 2020, 62.6 GW in 2021, and 66.5 GW in 2022.[43] *** projected that 2019 installations will total ***, 2020 installation ***, 2021 installations ***, and 2022 installations ***.[44] *** that installations will total *** in 2019, *** in 2020, *** in 2021, and *** in 2022.[45]

[41] Global Wind Energy Council (GWEC), *Global Wind 2017 Report*, 2018, pp. 16–17, 21, http://r20.rs6.net/tn.jsp?t=eyq5m97ab.0.0.bglpogdab.0&id=preview&r=3&p=http%3A%2F%2Ffiles.gwec.net%2Ffiles%2FGWR2017.pdf%3Fref%3DPR.

[42] GWEC, "51.3 GW of Global Wind Capacity Installed in 2018," News release, February 26, 2019, https://gwec.net/51-3-gw-of-global-wind-capacity-installed-in-2018/.

[43] GWEC, *Global Wind 2017 Report*, 2018, p. 29, http://gwec.net/publications/global-wind-report-2/, retrieved March 2019.

[44] ***.

[45] ***.

Global industry

According to ***, as of the fourth quarter of 2014 there were *** global wind tower producers with an annual wind tower production capacity of *** towers. This was a decrease from a global production capacity of *** towers in 2011. The *** towers was greater than *** of production capacity, based on the average turbine size at that time.[46]

Global exports

Global exports of towers and lattice masts (HS 7308.20), which includes wind towers if traded separately from the wind turbine, decreased from $3.8 billion in 2013 to $2.9 billion in 2017 (table IV-6). China accounted for 33.6 percent of global exports in 2017, Turkey accounted for 10.8 percent, Germany accounted for 8.5 percent, Denmark accounted for 8.3 percent, and Spain accounted for 5.7 percent.[47]

[46] ***.

[47] IHS Market, Global Trade Atlas, HS subheading 7308.20.

Table IV-6
Towers and lattice masts: Global exports by major sources, 2012-17

Item	Calendar year					
	2012	2013	2014	2015	2016	2017
	Quantity (units)					
Global exports from: United States	339	349	287	107	104	102
Global exports from subject countries: China	3,507	2,920	3,148	3,270	2,937	3,387
Vietnam	711	118	196	142	458	323
Global exports from other countries: Turkey	1,471	1,439	1,169	936	935	1,086
Germany	165	462	508	748	1,392	852
Denmark	1,701	1,574	1,397	470	505	838
Spain	1,044	988	696	823	875	570
Portugal	277	335	353	370	399	409
India	1,378	1,087	1,259	1,973	1,473	370
Indonesia	459	173	410	428	532	302
Sweden	350	171	265	165	277	292
Italy	185	264	178	301	207	202
Czech Republic	232	215	148	203	173	150
All other	2,951	2,128	2,009	1,889	1,658	1,198
Total	14,768	12,222	12,023	11,825	11,925	10,078
	Value ($1,000)					
Global exports from: United States	164,289	136,564	120,103	62,835	45,739	38,978
Global exports from subject countries: China	966,456	633,798	932,341	803,668	660,060	684,922
Vietnam	217,633	48,722	47,852	38,233	157,770	62,808
Global exports from other countries: Turkey	301,219	299,116	229,725	179,516	163,852	183,592
Germany	71,224	178,358	177,910	222,446	340,753	207,575
Denmark	698,160	814,774	585,361	276,048	367,905	484,351
Spain	367,958	298,902	232,669	237,968	243,204	159,150
Portugal	96,717	114,365	118,249	112,713	102,701	102,809
India	286,286	257,566	280,702	363,951	264,266	321,510
Indonesia	204,022	96,642	110,829	98,259	110,532	49,748
Sweden	112,365	70,116	105,769	52,302	71,610	64,821
Italy	88,476	85,392	69,068	120,840	71,797	65,971
Czech Republic	64,100	60,735	20,819	20,836	18,062	19,440
All other	1,159,676	671,011	604,265	650,521	567,001	416,902
Total	4,798,579	3,766,061	3,635,663	3,240,138	3,185,251	2,862,577

Table continued on next page.

Table IV-6—Continued
Towers and lattice masts: Global exports by major sources, 2012-17

Item	Calendar year					
	2012	2013	2014	2015	2016	2017
	Unit value (dollars per unit)					
Global exports from:						
United States	484,828	391,563	417,902	585,867	438,130	384,005
Global exports from subject countries:						
China	275,567	217,017	296,196	245,755	224,762	202,237
Vietnam	306,085	413,205	243,876	269,439	344,318	194,356
Global exports from other countries:						
Turkey	204,840	207,935	196,494	191,715	175,232	169,071
Germany	432,109	386,103	350,354	297,568	244,805	243,676
Denmark	410,410	517,608	419,088	587,756	728,616	578,287
Spain	352,531	302,525	334,174	289,292	277,869	279,369
Portugal	349,448	341,786	334,895	305,028	257,490	251,318
India	207,765	236,953	222,931	184,454	179,394	868,392
Indonesia	444,915	559,429	270,485	229,423	207,915	164,837
Sweden	321,067	408,940	399,007	317,729	258,887	222,315
Italy	478,622	323,979	388,344	401,023	346,124	326,899
Czech Republic	276,317	282,923	141,125	102,429	104,592	130,007
All other	393,007	315,312	300,747	344,300	341,900	348,079
Total	324,929	308,140	302,395	274,002	267,103	284,039
	Share of quantity (percent)					
Global exports from:						
United States	2.3	2.9	2.4	0.9	0.9	1.0
Global exports from subject countries:						
China	23.7	23.9	26.2	27.7	24.6	33.6
Vietnam	4.8	1.0	1.6	1.2	3.8	3.2
Global exports from other countries:						
Turkey	10.0	11.8	9.7	7.9	7.8	10.8
Germany	1.1	3.8	4.2	6.3	11.7	8.5
Denmark	11.5	12.9	11.6	4.0	4.2	8.3
Spain	7.1	8.1	5.8	7.0	7.3	5.7
Portugal	1.9	2.7	2.9	3.1	3.3	4.1
India	9.3	8.9	10.5	16.7	12.4	3.7
Indonesia	3.1	1.4	3.4	3.6	4.5	3.0
Sweden	2.4	1.4	2.2	1.4	2.3	2.9
Italy	1.3	2.2	1.5	2.5	1.7	2.0
Czech Republic	1.6	1.8	1.2	1.7	1.4	1.5
All other	20.0	17.4	16.7	16.0	13.9	11.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes continued on next page.

Note.--These data may be understated or overstated as (1) towers exported with the turbine are classified in HS 8502.31, and (2) HTS 7308.20 contains products outside the scope of these reviews.
Note.--Mirror data of global imports have been substituted for reported exports from Vietnam for 2017 and reported exports from China for all years.
Note.--Data were converted from kilograms to units by dividing by 132,449.
Note.--Because of rounding, figures may not add to total shown.

Source: Official national export statistics under HTS subheading 7308.20, as reported in the IHS/GTA database, accessed November 2, 2018.

Leading nonsubject suppliers to the U.S. market

The leading nonsubject sources of U.S. imports of wind towers in 2017 included Spain, Indonesia, Canada, Mexico, and Korea.[48] More information on the industry in each of these countries is included below.

Spain

There are currently at least seven firms (Eiffage Métal España, Emesa, GRI Towers, Haizea Wind Group, Navantia, Tecno Aranda, and Windar) producing wind towers in Spain.[49] In addition, Ecoventia manufactures concrete towers in Spain.[50] Wind installations in Spain totaled only 96 MW in 2017, but increased to 397 MW in 2018.[51]

[48] Based on trade in HTS statistical reporting number 7308.20.0020, towers and lattice masts of iron or steel, tubular, whether or not tapered, and sectional components thereof. This provision may include some nonsubject products. USITIC Dataweb/USDOC, retrieved November 26, 2018.

[49] Windar website, http://www.windar-renovables.es/home-location-country/es/1, retrieved November 27, 2018; Eiffage Métal Website, http://www.metal.eiffage.es/en/about-us/, retrieved March 14, 2019; GRI Towers Website, https://www.gri.com.es/en/company/business/gri-towers/, retrieved March 14, 2019; Navacel Website, http://www.navacel.com/sector.php and http://www.navacel.com/company.php, retrieved March 14, 2019; "Bilbao inaugural la mayor fabrica de torres y estructuras marinas del sur de Europa," May 27, 2018, https://www.energias-renovables.com/eolica/bilbao-inaugura-la-mayor-fabrica-de-torres-20180527, retrieved November 27, 2018; Tecno Aranda Website, http://www.tecnoaranda.com/torres-eolicas.html (accessed March 21, 2019).

[50] Ecoventia Website, http://www.ecoventia.com/, retrieved March 14, 2019.

[51] Global Wind Energy Council (GWEC), *Global Wind 2017 Report*, 2018, p. 17, retrieved February 6, 2019; Wind Europe, "Wind Energy in Europe in 2018," p. 10, https://windeurope.org/wp-content/uploads/files/about-wind/statistics/WindEurope-Annual-Statistics-2018.pdf, retrieved March 14, 2019.

Indonesia

The principal producers of wind turbine towers in Indonesia are Kenertec and Korindo Wind, which both have an annual production capacity of more than 800 towers.[52]

Canada

There are currently four firms (CS Wind, Enercon, Fabrication Delta, and Marmen) producing wind towers in Canada.[53] CS Wind has an annual capacity of 700 towers.[54] TSP Towers Canada closed its Canadian tower plant in 2015, as did DSTN and Hitachi in 2016.[55] The Brandt Group of Companies purchased the Hitachi facility in Saskatoon in 2017 with plans to transform the facility into a wind turbine factory.[56] Enercon's production in Canada is for concrete wind towers which are not subject merchandise.[57]

Mexico

There are at least three wind tower producers in Mexico (Arcosa/Trinity, Speco, and Windarmex). Speco's production capacity totals six tower sections per day. The Windarmex

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[52] Korindo Wind website, http://korindowind.com/faq.html, retrieved November 27, 2018; Kenertec website, http://kenertec.com/about-us/, retrieved November 29, 2018.

[53] Grimsby Lincoln News. "ENERCON opens $5 million factory in Lincoln," June 29, 2012, https://www.niagarathisweek.com/news-story/3266969-enercon-opens-5-million-factory-in-lincoln/, retrieved November 27, 2018; Frabrication Delta Website, http://www.fabricationdelta.com/en/areas-of-activity/, retrieved March 14, 2019; Marmen Website, https://marmeninc.com/en/services/wind-tower-fabrication, retrieved March 14, 2019.

[54] CS Wind Canada website, http://www.cswind.com/eng/?page=company%7Clocation%7Ccswind_canada, retrieved November 27, 2018.

[55] "Niagara region wind turbine tower plant shuts down," September 19, 2015, https://ontario-wind-resistance.org/2015/09/19/niagara-region-wind-turbine-tower-plan-shuts-down/ (accessed November 27, 2018); Pearson, Heide. "DSME Trenton closing after failing to make money, achieve job targets," February 19, 2016, https://globalnews.ca/news/2527876/dsme-trenton-closing-after-failing-to-make-money-achieve-job-targets/, retrieved November 27, 2018; Macpherson, Alex. "A terrible loss of jobs: Mitsubishi Hitachi manufacturing division shuts down, plant for sale," October 17, 2016, https://thestarphoenix.com/business/local-business/a-terrible-loss-of-jobs-mitsubishi-hitachi-manufacturing-division-shuts-down-plant-for-sale, retrieved November 27, 2018.

[56] Macpherson, Alex. "Brandt Groups plans wind turbine factory in old Mitsubishi Hitachi plant, targets around 500 employees," March 24, 2017, https://thestarphoenix.com/business/local-business/brandt-group-plans-wind-turbine-factory-in-old-mitsubishi-hitachi-plant, retrieved November 27, 2018.

[57] "ENERCON acquires 230 MW Niagara Region Wind Farm, launches new factory," July 17, 2015, https://canwea.ca/industry-news/2015/07/17/enercon-acquires-230mw-niagara-region-wind-farm-launches-new-factory/, retrieved November 30, 2018.

plant was established in 2016, and has a production capacity of 200 towers per year.[58] In 2015, ACCIONA Windpower opened a plant to produce (nonsubject) concrete wind towers.[59]

Korea

There are at least three producers of wind towers in Korea (Dongkuk S&C, Speco, and Win & P.), but information on production capacity for these companies is not available.[60]

[58] Speco Website, http://en.speco.co.kr/products/product00_1.html, retrieved March 13, 2019; Speco, "Tubular Tower for Wind Energy," n.d., p. 4, http://en.speco.co.kr/customer/catalogue/tower_catalogue.pdf, retrieved March 13, 2019; Arcosa, Inc., Form 10-K, Annual Filing to the Securities and Exchange Commission, February 28, 2019, pp. 4, 25, http://ir.arcosa.com/Doc/Index?did=50280108, retrieved March 13, 2019; Windar Renovables Website, http://www.windar-renovables.es/home-history/en, retrieved March 13, 2019; Macias, Teresa, "Windarmex Fabricará en Altamira 200 Torres," June 4, 2018, https://www.elfinanciero.com.mx/monterrey/windarmex-fabricara-en-altamira-200-torres, retrieved March 13, 2019.

[59] ACCIONA, "ACCIONA Windpower Inaugurates the First Concrete Tower Production Plant in Mexico," News release, March 5, 2015, https://www.acciona.com/pressroom/news/2015/march/acciona-windpower-inaugurates-first-concrete-tower-production-plant-mexico/, retrieved March 13, 2019.

[60] Dongkuk S&C Website, http://www.dongkuksnc.co.kr/en/sub/02_01.php, retrieved March 15, 2019; Speco Website, http://en.speco.co.kr/products/product00.html, retrieved March 15, 2019; Australian Government, Anti-Dumping Commission, Statement of Essential Facts No. 487, Inquiry into the Continuation of Anti-Dumping Measures Applying to Wind Towers Exported to Australia from the People's Republic of China and the Republic of Korea, January 5, 2019, p. 40, https://www.adcommission.gov.au/cases/EPR%20451%20%20550/EPR%20487/487-014%20-%20Report%20-%20Statement%20of%20Essential%20Facts%20SEF%20487.pdf, retrieved March 14, 2019.

PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

Raw materials accounted for a substantial share of the cost-of-goods sold ("COGS") for wind towers. During 2012-17, raw materials' share of COGS declined from *** to *** percent. During January-June 2017 and January-June 2018, raw materials' share of COGS was relatively at steady at *** and *** percent, respectively. Steel plate is the principal raw material used in making wind towers.

As shown in figure V-1, steel plate prices fluctuated over the review period, with decreases in 2012, increases in 2014, and decreases in 2015. Prices fluctuated upward in 2016-17, and then increased by more than 50 percent from November 2017 to February 2019.

Figure V-1
Steel plate: Monthly average prices, indexed, January 2012=100

* * * * * * *

In some cases OEMs provide raw materials for wind tower production and some OEMs require U.S. producers to purchase raw materials such as steel plate and steel flanges from specific suppliers at specified prices.[1]

Most U.S. producers reported increased raw material prices since 2012, and also anticipated increases in raw material prices, particularly noting increases in steel prices in 2018 as a result of section 232 steel tariffs (see Part I). All six responding U.S. producers reported that changes in raw material prices had affected wind tower prices, although several producers stated that they have been unable to increase their prices by the full amount of raw material price increases.[2]

In addition to increased prices for steel plate, firms also reported that increased prices for components subject to the 301 tariff remedies have also increased prices for wind towers.[3] *** reported increased prices for "flanges, cables, consumables and platforms," although it stated that section 232 steel tariffs have had a larger impact on prices of wind towers. *** stated that section 301 tariffs on raw materials will increase wind towers' prices by 6 to 8

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[1] WTTC's posthearing brief, Answers to Commission questions, p. 55.

[2] *** stated that that raw material prices had increased its wind towers' prices, but by less than the rising input costs. *** stated that although raw material prices have increased since 2012, imported towers have continued to drive down sales prices. *** stated that despite raw material price increases, it feels pressure to maintain tower prices because of increasing imports.

[3] Four of six responding U.S. producers, all three responding importers, and two of four purchasers reported increased prices for wind towers as a result of the announcement and subsequent implementation of remedies in the section 301 investigation and tariff actions regarding wind towers.

percent, with an additional 12 to 14 percent increase because of steel price increases resulting from section 232 tariffs. It stated that the increased prices of wind towers have led some customers to hold off on investments in wind towers. U.S. producers Broadwind, GRI, and Ventower have submitted a request for exclusion from the section 301 tariffs on forged steel flanges.[4]

Transportation costs to the U.S. market

Transportation costs for wind towers shipped from subject countries to the United States averaged 3.8 percent for China and 2.0 percent for Vietnam during 2016. Transportation costs for wind towers shipped from all countries to the United States averaged 10.7 percent in 2016. These estimates were derived from official import data and represent the transportation and other charges on imports.[5]

U.S. inland transportation costs

Shipping costs typically account for a substantial share of the total delivered cost of wind towers. All five responding U.S. producers and *** responding importers reported that their customers typically arrange transportation. Since most suppliers do not arrange transportation, most did not report U.S. inland transportation costs to their customers. *** reported that U.S. inland transportation costs accounted for *** percent of the sales price. ***.

Most purchasers (4 of 5) reported that they "usually" purchase wind towers that are offered at the lowest delivered cost, and one reported that it "always" does. With respect to f.o.b. price, three of 5 purchasers indicated that they "never" purchase the product with the lowest f.o.b. price, one "always" does, and one "usually" does. When asked how often they make purchase decisions based on the transportation cost to the wind turbine site, two answered "usually", two "sometimes", and one "always."

PRICING PRACTICES

Pricing methods

U.S. producers and importers reported using transaction-by-transaction negotiations and contracts to set prices for wind towers (table V-1). Most responding purchasers (4 of 5) reported that their purchases involve negotiations with their suppliers, and may include price,

[4] WTTC's posthearing brief, exh. 6.

[5] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2016 and then dividing by the customs value based on the HTS subheading 7308.20.000 and 7308.20.0020. Data are shown for 2016 since official statistics report no imports from Vietnam in 2017.

lead times, and delivery terms. Purchaser *** stated that it invites multiple suppliers to participate in the quoting process, and that purchase decisions are made based on qualification to meet production standards, proximity to the project site, price, quality, and delivery reliability.

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

Method	U.S. producers	Importers
Transaction-by-transaction	4	***
Contract	5	***
Set price list	---	***
Other	1	***
Responding firms	7	5

[1] 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.

U.S. producers reported selling the vast majority of their wind towers via long-term contracts (table V-2). The three producers (***) that reported selling via long-term contracts in 2017 indicated that such contracts typically allow for price renegotiation; two of these firms reported that long-term contracts fixed both quantity and price while one reported that they fixed quantity. One U.S. producer (***) reported that its long-term contract prices were indexed to raw material costs for steel.[6]

Table V-2
Wind towers: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2017

* * * * * * *

Two purchasers reported that they purchase wind towers monthly, and one firm each purchases daily, weekly, and annually. Most responding purchasers (4 of 5) reported that they did not expect their purchasing patterns to change in the next two years.

Purchasers reported contacting between 1 and 10 suppliers before making a purchase. Specifically, *** each reported contacting 3 to 5 suppliers, *** reported contacting 2 to 8, *** reported contacting 1 to 2, and *** reported contacting 3 to 10.

[6] ***.

Sales terms and discounts

All responding U.S. producers and *** responding importers indicated that they typically quote prices on an f.o.b. basis. One U.S. producer (***) reported that it offers quantity/total volume discounts, and three other U.S. producers offer discounts for early payment. Among importers, two reported no discount policy, one reported offering quantity discounts, and one reported early payment discounts.

Price leadership

Three of the five responding purchasers did not report any price leaders in the U.S. market, one (***) stated that Asian suppliers were the price leaders, and one (***) stated that Marmen was a price leader. ***.

Long-term arrangements

Purchasers' reported long-term contracts/supply agreements with suppliers of wind towers are presented in table V-3. Two firms supplied this data, whereas three firms did not (***).

Table V-3
Wind towers: U.S. purchasers' long term arrangements

* * * * * * *

PRICE DATA[7]

Since sales agreements for wind towers are largely determined for specific wind turbine projects, purchasers were requested to provide information regarding projects involving wind towers since January 1, 2012. The data was requested for each project as if they were put out for bidding, however, purchasers do not necessarily use bid competition to determine their suppliers, as described below.

In the original investigations, GE reported that its method of procuring wind towers is based more on a logistical model than a project-specific model. GE stated that it relied on the

[7] In the original investigations, for GE's purchases, the delivered costs of towers from China were higher than those supplied by U.S. producers in 23 of 24 comparisons. For Siemens' purchases, Chinese delivered prices were higher in 7 of 10 instances and Vietnamese delivered prices were higher in 5 of 7 instances. *Utility Scale Wind Towers from China and Vietnam*, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final), USITC Publication 4372, February 2013, p. V-4 and V-6.

delivered cost rather than the f.o.b. cost since transportation costs account for a large portion of the total cost of the finished wind tower.[8] ***.

At that time, Siemens stated that it did not use bid competition to procure wind towers. Because of the logistics and expense of moving towers, it tried to buy as many towers as needed from a qualified facility closest to the project. It employed a business model of accepting custom designs and orders, ordering for specific projects, and ordering wind towers only upon completion of a purchase order by a wind farm or utility.[9] ***.

In this review, responding purchasers reported that 404 projects were bid since January 1, 2012. Of these 404 projects, 396 had bids from domestic producers, 28 had bids from Chinese suppliers, 7 had bids from Vietnamese suppliers, and 138 had bids from suppliers from all other countries.

Four of the five responding purchasers reported that they had projects for which both a domestic producer and a Chinese or Vietnamese supplier bid.[10] There were *** such projects. Purchasers were requested to provide the bid or purchase data for all projects since January 1, 2012 that involved at least one bid or purchase from a U.S. producer and at least one bid from a supplier of wind towers produced in China or Vietnam. Most of the projects were reported by ***. ***. ***. ***.

***** projects**

Appendix E presents data ***. A summary of the data is provided in tables V-4a, V-4b, V-5a, and V-5b. ***.

Table V-4a
Wind towers: * average f.o.b. purchase costs, by country and by project, delivery year 2012**

* * * * * * *

Table V-4b
Wind towers: * average f.o.b. purchase costs, by country and by project, delivery year 2016**

* * * * * * *

[8] It stated that "***." ***. *Utility Scale Wind Towers from China and Vietnam, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final)*, USITC Publication 4372, February 2013, p. V-3, and *Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final): Utility Scale Wind Towers from China and Vietnam*-- Staff Report, INV-LL-002, January 7, 2013, p. V-5.

[9] *Utility Scale Wind Towers from China and Vietnam*, Inv. Nos. 701-TA-486 and 731-TA-1195-1196 (Final), USITC Publication 4372, February 2013, p. V-3 to V-5.

[10] Purchaser *** had only domestic purchases/bids for its *** projects.

Table V-5a
Wind towers: * average delivered purchase costs, by country and by project, delivery year 2012**

* * * * * * *

Table V-5b
Wind towers: * average delivered purchase costs, by country and by project, delivery year 2016**

* * * * * * *

Purchasers' perceptions of relative price trends

Purchasers were asked how the prices of wind towers from the United States had changed relative to the prices of wind towers from China and Vietnam since 2012. Four purchasers reported that U.S. prices had changed, two reported that China's prices had changed, and three reported that Vietnam's prices had changed. Most firms that reported relative changes between U.S. prices and import prices reported that U.S. prices were now relatively higher than import prices from China and Vietnam, and one *** reported that U.S. prices and Vietnamese prices had changed by the same amount.

*** stated that wind tower prices have increased globally due to increasing steel costs, and that costs have risen even more in the United States because of the section 301 tariffs and 232 tariffs on steel. *** also reported increased wind tower prices in 2018 because of steel tariffs.

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
83 FR 100 January 2, 2018	*Initiation of Five-Year (Sunset) Reviews*	https://www.gpo.gov/fdsys/pkg/FR-2018-01-02/pdf/2017-28261.pdf
83 FR 142 January 2, 2018	*Utility Scale Wind Towers from China and Vietnam; Institution of Five-Year Reviews*	https://www.gpo.gov/fdsys/pkg/FR-2018-01-02/pdf/2017-28239.pdf
83 FR 19220 May 2, 2018	*Utility Scale Wind Towers From the People's Republic of China and the Socialist Republic of Vietnam: Final Results of Expedited First Sunset Reviews of Antidumping Duty Orders*	https://www.gpo.gov/fdsys/pkg/FR-2018-05-02/pdf/2018-09312.pdf
83 FR 22960 May 17, 2018	*Utility Scale Wind Towers From the People's Republic of China: Final Results of the Expedited First Sunset Review of the Countervailing Duty Order*	https://www.gpo.gov/fdsys/pkg/FR-2018-05-17/pdf/2018-10555.pdf
83 FR 46516 September 13, 2018	*Utility Scale Wind Towers From China and Vietnam; Scheduling of Full Five-Year Reviews*	https://www.gpo.gov/fdsys/pkg/FR-2018-09-13/pdf/2018-19894.pdf
84 FR 2926 February 8, 2019	*Utility Scale Wind Towers From China and Vietnam; Revised Schedule for Full Five-Year Reviews*	https://www.govinfo.gov/content/pkg/FR-2019-02-08/pdf/2019-01570.pdf
84 FR 7934 March 5, 2019	*Utility Scale Wind Towers From China and Vietnam; Cancellation of Hearing for Full Five-Year Reviews*	https://www.govinfo.gov/content/pkg/FR-2019-03-05/pdf/2019-03903.pdf

APPENDIX B

INFORMATION REGARDING THE COMMISSION'S PROPOSED HEARING

The hearing scheduled for utility scale wind towers from China and Vietnam on February 28, 2019 was canceled.[1] The domestic interested party (WTTC) submitted the sole prehearing brief, and a request to appear the Commission hearing. No other party entered an appearance in these reviews. Subsequently, noting that no other party requested to appear at the hearing, counsel for the domestic interested party filed a request to cancel the hearing. In lieu of a hearing, the domestic interested party responded to written questions submitted by the Commission, as part of its posthearing brief submission.

[1] *Utility Scale Wind Towers From China and Vietnam; Cancellation of Hearing for Full Five-Year Reviews*, 84 FR 7934, Mach 5, 2019.

APPENDIX C

SUMMARY DATA

Table C-1
Wind towers: Summary data concerning the U.S. market, 2012-17, January to June 2017, and January to June 2018

(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data							
	Calendar year						January to June	
	2012	2013	2014	2015	2016	2017	2017	2018
U.S. consumption quantity:								
Amount	3,935	***	3,328	4,003	4,404	3,828	2,107	***
Producers' share (fn1)	37.4	***	69.5	66.7	70.3	69.4	69.0	***
Importers' share (fn1):								
China	***	***	***	***	***	***	***	***
Vietnam subject sources	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject sources	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	62.6	***	30.5	33.3	29.7	30.6	31.0	***
U.S. consumption value:								
Amount	1,395,033	***	1,162,265	1,326,875	1,333,641	1,056,688	605,170	***
Producers' share (fn1)	44.6	***	78.7	74.8	74.9	79.1	78.0	***
Importers' share (fn1):								
China	***	***	***	***	***	***	***	***
Vietnam subject sources	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Vietnam nonsubject sources	***	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	55.4	***	21.3	25.2	25.1	20.9	22.0	***
U.S. shipments of imports from:								
China:								
Quantity	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***
Vietnam subject sources:								
Quantity	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***
Subject sources:								
Quantity	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***
Vietnam nonsubject sources:								
Quantity	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***
All other sources:								
Quantity	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***
Nonsubject sources:								
Quantity	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***
All import sources:								
Quantity	2,464	***	1,016	1,331	1,306	1,170	653	***
Value	772,894	***	247,929	333,875	335,195	221,118	132,928	***
Unit value	$313,675	***	$244,025	$250,845	$256,658	$188,990	$203,565	***
Ending inventory quantity	***	***	***	***	***	***	***	***

Table continued on next page.

Table C-1---Continued
Wind towers: Summary data concerning the U.S. market, 2012-17, January to June 2017, and January to June 2018

(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Period changes						
		Comparison years					Jan-Jun
	2012-17	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
U.S. consumption quantity:							
Amount	(2.7)	***	***	20.3	10.0	(13.1)	***
Producers' share (fn1)	32.1	***	***	(2.7)	3.6	(0.9)	***
Importers' share (fn1):							
China	***	***	***	***	***	***	***
Vietnam subject sources	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***
Vietnam nonsubject sources	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***
All import sources	(32.1)	***	***	2.7	(3.6)	0.9	***
U.S. consumption value:							
Amount	(24.3)	***	***	14.2	0.5	(20.8)	***
Producers' share (fn1)	34.5	***	***	(3.8)	0.0	4.2	***
Importers' share (fn1):							
China	***	***	***	***	***	***	***
Vietnam subject sources	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***
Vietnam nonsubject sources	***	***	***	***	***	***	***
All other sources	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***
All import sources	(34.5)	***	***	3.8	(0.0)	(4.2)	***
U.S. shipments of imports from:							
China:							
Quantity	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***
Vietnam subject sources:							
Quantity	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***
Subject sources:							
Quantity	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***
Vietnam nonsubject sources:							
Quantity	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***
All other sources:							
Quantity	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***
Nonsubject sources:							
Quantity	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***
All import sources:							
Quantity	(52.5)	***	***	31.0	(1.9)	(10.4)	***
Value	(71.4)	***	***	34.7	0.4	(34.0)	***
Unit value	(39.7)	***	***	2.8	2.3	(26.4)	***
Ending inventory quantity	***	***	***	***	***	***	***

Table continued on next page.

Table C-1--Continued
Wind towers: Summary data concerning the U.S. market, 2012-17, January to June 2017, and January to June 2018

(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Reported data							
	Calendar year						January to June	
	2012	2013	2014	2015	2016	2017	2017	2018
U.S. producers':								
Average capacity quantity	2,548	2,371	2,876	3,164	3,843	4,092	2,030	2,075
Production quantity	1,564	1,453	2,392	2,727	3,070	2,780	1,479	1,262
Capacity utilization (fn1)	61.4	61.3	83.2	86.2	79.9	67.9	72.9	60.8
U.S. shipments:								
Quantity	1,471	1,304	2,312	2,672	3,098	2,658	1,454	1,345
Value	622,139	426,214	914,336	993,000	998,446	835,570	472,242	435,862
Unit value	$422,936	326,851	$395,474	$371,632	$322,287	$314,360	$324,788	324,061
Export shipments:								
Quantity	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***
Production workers	1,386	1,543	2,017	2,140	2,254	2,317	2,407	2,153
Hours worked (1,000s)	2,673	2,611	3,474	3,636	3,745	4,099	2,204	1,821
Wages paid ($1,000)	76,502	97,775	131,254	134,560	145,474	152,633	81,017	70,587
Hourly wages	$28.62	$37.45	$37.78	$37.01	$38.84	$37.24	$36.76	$38.76
Productivity (units per 1,000 hours)	0.6	0.6	0.7	0.8	0.8	0.7	0.7	0.7
Unit labor costs	48,914	67,292	54,872	49,344	47,386	54,904	54,778	55,933
Net sales:								
Quantity	1,547	1,482	2,312	2,672	3,098	2,658	1,454	1,345
Value	661,031	503,632	914,336	993,000	998,443	835,570	472,242	435,862
Unit value	$427,299	$339,833	$395,474	$371,632	$322,286	$314,360	$324,788	$324,061
Cost of goods sold (COGS)	618,777	462,705	754,193	865,736	832,309	701,805	401,561	382,803
Gross profit of (loss)	42,254	40,927	160,143	127,264	166,134	133,765	70,681	53,059
SG&A expenses	22,881	21,015	27,098	26,074	26,367	28,004	14,104	13,698
Operating income or (loss)	19,373	19,912	133,045	101,190	139,767	105,761	56,577	39,361
Net income or (loss)	(3,762)	(32,157)	118,873	107,307	119,066	79,907	43,102	26,000
Capital expenditures	4,340	43,339	26,718	11,166	71,925	41,113	22,182	11,033
Unit COGS	$399,985	$312,217	$326,208	$324,003	$268,660	$264,035	$276,177	$284,612
Unit SG&A expenses	$14,791	$14,180	$11,721	$9,758	$8,511	$10,536	$9,700	$10,184
Unit operating income or (loss)	$12,523	$13,436	$57,545	$37,871	$45,115	$39,790	$38,911	$29,265
Unit net income or (loss)	($2,432)	($21,698)	$51,416	$40,160	$38,433	$30,063	$29,644	$19,331
COGS/sales (fn1)	93.6	91.9	82.5	87.2	83.4	84.0	85.0	87.8
Operating income or (loss)/sales (fn1)	2.9	4.0	14.6	10.2	14.0	12.7	12.0	9.0
Net income or (loss)/sales (fn1)	(0.6)	(6.4)	13.0	10.8	11.9	9.6	9.1	6.0

Table C-1--Continued
Wind towers: Summary data concerning the U.S. market, 2012-17, January to June 2017, and January to June 2018

(Quantity=units; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per unit; Period changes=percent--exceptions noted)

	Period changes						
		Comparison years					Jan-Jun
	2012-17	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
U.S. producers':							
Average capacity quantity	60.6	(6.9)	21.3	10.0	21.5	6.5	2.2
Production quantity	77.7	(7.1)	64.6	14.0	12.6	(9.4)	(14.7)
Capacity utilization (fn1)	6.6	(0.1)	21.9	3.0	(6.3)	(11.9)	(12.0)
U.S. shipments:							
Quantity	80.7	(11.4)	77.3	15.6	15.9	(14.2)	(7.5)
Value	34.3	(31.5)	114.5	8.6	0.5	(16.3)	(7.7)
Unit value	(25.7)	(22.7)	21.0	(6.0)	(13.3)	(2.5)	(0.2)
Export shipments:							
Quantity	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***
Production workers	67.2	11.3	30.7	6.1	5.3	2.8	(10.6)
Hours worked (1,000s)	53.3	(2.3)	33.1	4.7	3.0	9.5	(17.4)
Wages paid ($1,000)	99.5	27.8	34.2	2.5	8.1	4.9	(12.9)
Hourly wages	30.1	30.8	0.9	(2.0)	5.0	(4.1)	5.5
Productivity (units per 1,000 hours)	15.9	(4.9)	23.7	8.9	9.3	(17.3)	3.3
Unit labor costs	12.2	37.6	(18.5)	(10.1)	(4.0)	15.9	2.1
Net sales:							
Quantity	71.8	(4.2)	56.0	15.6	15.9	(14.2)	(7.5)
Value	26.4	(23.8)	81.5	8.6	0.5	(16.3)	(7.7)
Unit value	(26.4)	(20.5)	16.4	(6.0)	(13.3)	(2.5)	(0.2)
Cost of goods sold (COGS)	13.4	(25.2)	63.0	14.8	(3.9)	(15.7)	(4.7)
Gross profit of (loss)	216.6	(3.1)	291.3	(20.5)	30.5	(19.5)	(24.9)
SG&A expenses	22.4	(8.2)	28.9	(3.8)	1.1	6.2	(2.9)
Operating income or (loss)	445.9	2.8	568.2	(23.9)	38.1	(24.3)	(30.4)
Net income or (loss)	(2224.1)	754.8	(469.7)	(9.7)	11.0	(32.9)	(39.7)
Capital expenditures	847.3	898.6	(38.4)	(58.2)	544.1	(42.8)	(50.3)
Unit COGS	(34.0)	(21.9)	4.5	(0.7)	(17.1)	(1.7)	3.1
Unit SG&A expenses	(28.8)	(4.1)	(17.3)	(16.7)	(12.8)	23.8	5.0
Unit operating income or (loss)	[fn2]	[fn2]	328.3	(34.2)	19.1	(11.8)	(24.8)
Unit net income or (loss)	[fn2]	[fn2]	(337.0)	(21.9)	(4.3)	(21.8)	(34.8)
COGS/sales (fn1)	(9.6)	(1.7)	(9.4)	4.7	(3.8)	0.6	2.8
Operating income or (loss)/sales (fn1)	9.7	1.0	10.6	(4.4)	3.8	(1.3)	(2.9)
Net income or (loss)/sales (fn1)	10.1	(5.8)	19.4	(2.2)	1.1	(2.4)	(3.2)

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

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.

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

HISTORICAL DATA

Table C-1
Wind towers: Summary data concerning the U.S. market, 2009-11, January-June 2011, and January-June 2012

(Quantity=units, value=1,000 dollars, unit values, unit labor costs, and unit expenses are per unit; period changes=percent, except where noted)

	Reported data					Period changes			
				January-June					Jan.-June
Item	2009	2010	2011	2011	2012	2009-11	2009-10	2010-11	2011-12
U.S. consumption quantity:									
Amount	3,842	2,887	***	***	***	***	-24.9	***	***
Producers' share (1)	53.5	60.2	***	***	***	***	6.7	***	***
Importers' share (1):									
China	***	***	***	***	***	***	***	***	***
Vietnam	***	***	***	***	***	***	***	***	***
Subtotal	15.9	12.7	***	***	***	***	-3.2	***	***
All other sources	30.6	27.1	***	***	***	***	-3.5	***	***
Total imports	46.5	39.8	***	***	***	***	-6.7	***	***
U.S. consumption value:									
Amount	1,248,167	922,282	***	***	***	***	-26.1	***	***
Producers' share (1)	47.0	57.3	***	***	***	***	10.3	***	***
Importers' share (1):									
China	***	***	***	***	***	***	-0.7	***	***
Vietnam	***	***	***	***	***	***	***	***	***
Subtotal	14.8	14.1	***	***	***	***	-0.7	***	***
All other sources	38.2	28.6	***	***	***	***	-9.6	***	***
Total imports	53.0	42.7	***	***	***	***	-10.3	***	***
U.S. shipments of imports from:									
China:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Vietnam:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subtotal (subject):									
Quantity	610	366	861	429	1,256	41.1	-40.0	135.2	192.8
Value	185,060	130,165	265,862	135,851	358,974	43.7	-29.7	104.2	164.2
Unit value	$303,377	$355,642	$308,783	$316,669	$285,807	1.8	17.2	-13.2	-9.7
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All other sources:									
Quantity	1,175	783	475	246	382	-59.6	-33.4	-39.3	55.3
Value	476,976	263,968	155,942	78,882	137,764	-67.3	-44.7	-40.9	74.6
Unit value	$405,937	$337,124	$328,299	$320,659	$360,639	-19.1	-17.0	-2.6	12.5
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All sources:									
Quantity	1,785	1,149	1,336	675	1,638	-25.2	-35.6	16.3	142.7
Value	662,036	394,133	421,804	214,733	496,738	-36.3	-40.5	7.0	131.3
Unit value	$370,889	$343,023	$315,722	$318,123	$303,259	-14.9	-7.5	-8.0	-4.7
Ending inventory quantity	***	***	***	***	***	***	***	***	***
U.S. producers':									
Average capacity quantity	3,343	3,898	***	***	***	***	16.6	***	***
Production quantity	2,069	1,751	***	***	***	***	-15.4	***	***
Capacity utilization (1)	61.9	44.9	***	***	***	***	-17.0	***	***
U.S. shipments:			***	***	***	***		***	***
Quantity	2,057	1,738	***	***	***	***	-15.5	***	***
Value	586,131	528,149	***	***	***	***	-9.9	***	***
Unit value	$284,945	$303,883	***	***	***	***	6.6	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (1)	***	***	***	***	***	***	***	***	***
Production workers	1,616	1,695	***	***	***	***	4.9	***	***
Hours worked (1,000s)	3,021	3,332	***	***	***	***	10.3	***	***
Wages paid ($1,000s)	85,334	94,340	***	***	***	***	10.6	***	***
Hourly wages	$28.25	$28.31	***	***	***	***	0.2	***	***
Productivity (units/1,000 hours)	0.7	0.5	***	***	***	***	-24.8	***	***
Unit labor costs	$41,059	$53,878	***	***	***	***	31.2	***	***
Net sales:									
Quantity	***	***	2,072	969	1,092	***	***	***	12.7
Value	***	***	766,495	307,139	470,754	***	***	***	53.3
Unit value	***	***	$369,930	$316,965	$431,093	***	***	***	36.0
Cost of goods sold (COGS)	***	***	687,080	300,827	443,394	***	***	***	47.4
Gross profit or (loss)	***	***	79,415	6,312	27,360	***	***	***	333.5
SG&A expenses	***	***	65,286	28,774	70,751	***	***	***	145.9
Operating income or (loss)	***	***	14,129	-22,462	-43,391	***	***	***	-93.2
Capital expenditures	***	***	5,379	15,650	3,044	***	***	***	-80.5
Unit COGS	***	***	$331,602	$310,451	$406,038	***	***	***	30.8
Unit SG&A expenses	***	***	$31,509	$29,695	$64,790	***	***	***	118.2
Unit operating income or (loss)	***	***	$6,819	-$23,181	-$39,735	***	***	***	71.4
COGS/sales (1)	***	***	89.6	97.9	94.2	***	***	***	-3.8
Operating income or (loss)/ sales (1)	***	***	1.8	-7.3	-9.2	***	***	***	-1.9

(1) "Reported data" are in percent and "period changes" are in percentage points.
(2) Undefined.
Note.--Financial data are reported on a fiscal year basis and may not necessarily be comparable to data reported on a calendar year basis. Because of rounding, figures may not add to the totals shown. Unit values and shares are calculated from the unrounded figures.

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

APPENDIX D

COMMENTS REGARDING THE EFFECT OF THE ORDERS AND THE LIKELY EFFECTS OF REVOCATION

Table D-1
Wind towers: Firms' narratives on the impact of the orders and the likely impact of revocation

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APPENDIX E

*** PURCHASE COST DATA

Table E-1a
Wind towers: * purchase costs, by project, ***

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Table E-1b
Wind towers: * purchase costs, by project, ***

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