

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN VARIABLE SPEED WIND
TURBINE GENERATORS AND
COMPONENTS THEREOF**

Investigation No. 337-TA-1218

COMMISSION OPINION

On November 12, 2021, the Commission determined to review in part the final initial determination (“Final ID”) issued by the presiding administrative law judge (“ALJ”) on September 10, 2021. 86 Fed. Reg. 64525-27 (Nov. 18, 2021). On review, the Commission has determined that there has been a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, with respect to claims 29, 30, 33-35, and 37 of U.S. Patent No. 6,921,985 (“the ’985 patent”). This opinion sets forth the Commission’s reasoning in support of that determination.

I. BACKGROUND

A. Procedural History

The Commission instituted this investigation on September 8, 2020, based on a complaint filed by complainant General Electric Company of Boston, Massachusetts (“GE”). 85 Fed. Reg. 55492-93 (Sept. 8, 2020). The complaint, as supplemented and amended, alleged a violation of section 337 in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain variable speed wind turbine generators and components thereof by reason of infringement of one or more of claims 1, 3, 6, 7, 12, 15-16, 21-24, 29, 30, and 33-38 of the ’985 patent and claims 1 and 2 of U.S. Patent No. 7,629,705 (“the ’705 patent”). *Id.* at 55493; Order No. 10 (Dec. 2, 2020), *unreviewed* by Comm’n Notice

PUBLIC VERSION

(Dec. 22, 2020). The notice of investigation named as respondents Siemens Gamesa Renewable Energy Inc. of Orlando, Florida; Siemens Gamesa Renewable Energy A/S of Brande, Denmark; and Gamesa Electric, S.A.U. of Zamudio, Spain (collectively, “SGRE”). 85 Fed. Reg. at 55493. The Office of Unfair Import Investigations is not a party to the investigation. *Id.*

The Commission subsequently terminated the investigation with respect to claims 3, 7, 15, 16, 21-24, 36, and 38 of the '985 patent and claim 2 of the '705 patent based on GE's partial withdrawal of the complaint.¹ Accordingly, at the time of the Final ID, the remaining asserted claims were claims 1, 6, 12, 29, 30, 33-35, and 37 of the '985 patent and claim 1 of the '705 patent.

The Commission also issued a summary determination that GE satisfied the economic prong of the domestic industry requirement with respect to both asserted patents. Order No. 23 (Apr. 26, 2021), *unreviewed by Comm'n Notice* (May 26, 2021).

On September 10, 2021, the ALJ issued the Final ID finding a violation of section 337 with respect to claims 1, 6, 12, 29, 20, 33-35, and 37 of the '985 patent. Final ID at 147. The ALJ found that: (1) GE showed that SGRE infringed claims 1, 6, 12, 29, 20, 33-35, and 37 of the '985 patent and claim 1 of the '705 patent; (2) GE satisfied the technical prong of the domestic industry requirement with respect to both asserted patents; and (3) SGRE showed that claim 1 of the '705 patent is directed to unpatentable subject matter, but that no other asserted claim is invalid or directed to unpatentable subject matter. *Id.* With respect to infringement, the ALJ found that: (1) all of the accused products directly infringe claims 1, 6, and 12 of the '985

¹ Order No. 20 (Mar. 30, 2021), *unreviewed by Comm'n Notice* (Apr. 15, 2021) (terminating the investigation with respect to claims 3, 7, 36, and 38 of the '985 patent and claim 2 of the '705 patent); Order No. 24 (Apr. 26, 2021), *unreviewed by Comm'n Notice* (May 17, 2021) (terminating the investigation with respect to claims 15, 16, and 21-24 of the '985 patent).

PUBLIC VERSION

patent; (2) the use of the accused full-converter products directly infringes claims 29, 30, 33-35, and 37 of the '985 patent; (3) the use of the accused doubly-fed induction generator (“DFIG”) products, but not the accused full-converter products, infringes claim 1 of the '705 patent; and (4) SGRE induces others to infringe claims 1, 6, 12, 29, 20, 33-35, and 37 of the '985 patent and claim 1 of the '705 patent, but is not liable for contributory infringement because GE failed to show that the accused products lack substantial non-infringing uses. *Id.* at 33-58, 102-14.

Although the Final ID appears to conclude that all accused full-converter products infringe claims 29, 30, 33-35, and 37 of the '985 patent, *id.* at 51-55, 147, the ALJ specifically noted that GE only accused full-converter products operating with earlier versions of software of infringing those claims, *id.* at 11. Thus, although the Final ID does not adjudicate SGRE’s full-converter products operating with the later version of software, the parties agree that these products do not infringe claims 29, 30, 33-35, and 37 of the '985 patent. CX-0388; GE Init. Sub. at 3-5.

Both GE² and SGRE³ petitioned the Commission to review several of the findings in the Final ID. On November 12, 2021, the Commission determined to review the following issues: (1) the Final ID’s finding that the accused products satisfy the limitation “a second mode of operation comprising the low voltage event” of claims 1, 6, and 12 of the '985 patent; (2) the Final ID’s finding that the accused DFIG turbines satisfy the limitation “turbine controller causes the blade pitch control system to vary the pitch of the one or more blades” of claims 1, 6, and 12 of the '985 patent; (3) the Final ID’s finding that certain full-converter turbines using later software and DFIG Products infringe claims 29, 30, 33-35, and 37 of the '985 patent; and (4) the

² Complainant General Electric’s Petition for Review of Initial Determination on Violation of Section 337 (Sept. 22, 2021) (“GE Pet.”).

³ Respondents’ Petition and Contingent Petition for Review of the Final Initial Determination (Sept. 24, 2021) (“SGRE Pet.”).

PUBLIC VERSION

Final ID’s finding that the accused products satisfy the limitation “during the entire duration of and subsequent to a zero voltage fault that lasts for an undetermined period of time” of claim 1 of the ’705 patent. 86 Fed. Reg. 64526 (Nov. 18, 2021). In the Commission’s Notice of Review, the Commission also determined to take no position on whether GE showed that the accused products satisfy the limitation of claim 1 of the ’705 patent “during the entire duration of and subsequent to a zero voltage fault that lasts for an undetermined period of time.” *Id.* The Commission also declined to review the remainder of the Final ID, and thereby affirmed the Final ID’s finding that GE failed to demonstrate a violation with respect to the ’705 patent based on patent ineligibility pursuant to 35 U.S.C. § 101.

The Commission also sought briefing from the parties, interested government agencies, and interested persons concerning remedy, bonding, and the public interest. On December 7, 2021, GE and SGRE filed their initial submissions in response to the Commission’s request for briefing. On December 14, 2021, GE and SGRE filed their reply submissions in response to the Commission’s request for briefing. The Commission also received submissions from U.S. Representative Paul Tonko; U.S. Representative William Timmons; Senator Patrick Leahy; Senator Tim Scott; Senators John Hoeven, Kevin Cramer, and Kelly Armstrong; Senators Charles Grassley and Joni Ernst; Governor Kim Reynolds of Iowa; Governor Laura Kelly of Kansas; RWE Renewables Americas, LLC; Enel Green Power North America, Inc.; Avangrid Renewables, LLC; Allete Clean Energy; Clearway Energy Group, LLC; Algonquin Power & Utilities Corp.; and MidAmerican Energy Company.

B. The Remaining Asserted Patent

The sole remaining patent at issue on review is the ’985 patent, which is entitled “Low Voltage Ride Through for Wind Turbine Generators,” and claims priority to a patent application

PUBLIC VERSION

filed on January 24, 2003. Some of the claims of the '985 patent were amended during an *inter partes* reexamination proceeding. At the evidentiary hearing, GE asserted that SGRE infringed claims 1, 6, 12, 29, 30, 33-35, and 37 of the '985 patent, and that GE satisfied the technical prong of the domestic industry requirement through claims 1, 6, 15, and 29 of the '985 patent. Final ID at 6. The asserted infringement claims, with relevant language highlighted in bold, state as follows:

1. A wind turbine generator comprising:

a generator;

a blade pitch control system to vary a pitch of one or more blades;

a turbine controller coupled with the blade pitch control system;

a first power source coupled with the turbine controller and with the blade pitch control system to provide power during a first mode of operation; and

an uninterruptible power supply coupled to the turbine controller and with the blade pitch control system to provide power during a low voltage event in which the generator remains connected to a grid when the voltage at the output terminals of the generator is less than 50% of a rated voltage of the generator;

wherein in response to detection of a transition from the first mode of operation to a **second mode of operation comprising the low voltage event** the turbine controller **causes the blade pitch control system to vary the pitch of the one or more blades in response to the transition.**

6. A wind turbine generator comprising:

a generator;

a blade pitch control system to vary a pitch of one or more blades;

PUBLIC VERSION

a turbine controller coupled with the blade pitch control system;

a first power source coupled with the turbine controller and with the blade pitch control system to provide power during a first mode of operation; and

an uninterruptible power supply coupled to the turbine controller and with the blade pitch control system to provide power during a low voltage event in which the generator remains connected to a grid and wherein a low voltage event comprises a voltage at the output terminals of the generator between 15% and 50% of a rated voltage of the generator;

wherein in response to detection of a transition from the first mode of operation to **a second mode of operation comprising the low voltage event** the turbine controller **causes the blade pitch control system to vary the pitch of the one or more blades in response to the transition.**

12. The wind turbine generator of claim 1 wherein the uninterruptible power supply comprises a battery power supply.

29. A method comprising:

providing power to wind turbine components using a generator of the wind turbine;

detecting a low voltage event;

receiving power from an uninterruptible power supply to a first subset of wind turbine components, wherein the first subset of wind turbine components comprises a blade pitch controller to selectively power the blade pitch controller to maintain a rotor speed below a predetermined overspeed limit during the low voltage event; and

disconnecting a second subset of wind turbine components from the generator during the low voltage event.

30. The method of claim 29 wherein the uninterruptible power supply comprises a battery power supply.

33. The method of claim 29 wherein a low voltage event comprises a voltage at the output terminals of the generator of less than 75% of a rated voltage of the generator.

34. The method of claim 33 wherein the low voltage event occurs for up to 3 seconds.

35. The method of claim 29 wherein a low voltage event comprises a voltage at the output terminals of the generator of less than 50% of a rated voltage of the generator.

37. The method of claim 29 wherein a low voltage event comprises a voltage at the output terminals of the generator between 15% and 50% of a rated voltage of the generator.

C. The Accused Products

GE accuses two types of SGRE wind turbines generators: (1) wind turbine generators with a full converter generator (“Accused Full-Converter Products”); and (2) wind turbine generators with a doubly-fed induction generator (“Accused DFIG Products”) (together, “Accused Products”), as well as components used to construct those wind turbines—“namely generators, power converters, uninterruptible power supplies, turbine controllers, blade pitch control systems, and converter controllers.” Final ID at 9; Notice of Investigation, 85 Fed. Reg. 55492-93 (Sept. 8, 2020).

The parties stipulated that there are also two subsets of Accused Full-Converter Products: (a) full-converter wind turbine models (SWT 2.3-108, SWT 2.7-129, and SWT 2.9-129) that include an ABB converter equipped with earlier versions of software (*i.e.*, software versions prior to PG_V30_VS_201202) and (b) full-converter wind turbine models (SWT 2.3-108, SWT 2.7-129, and SWT 2.9-129) that include an ABB converter equipped with later versions of software (*i.e.*, software version PG_V30_VS_201202 and subsequent versions) (“the Redesigned Full-Converter Products”). *Id.* at 10; CX-0388 at 1. The parties do not indicate that there is any difference between these subsets of categories other than the software version of the ABB converter, so there is no indication that any other components have relevant differences.

PUBLIC VERSION

Additionally, GE does not dispute that many of SGRE's existing wind turbine generators are licensed pursuant to an agreement between GE and one of SGRE's predecessors, Gamesa Eolica. GE Init. Sub. at 23-24. Although GE and SGRE dispute how many wind turbine generators are licensed, GE does not dispute that the license entitles SGRE to make permissible repairs on those licensed wind turbines. GE Resp. at 4 n.2. GE also agreed that it did not allege infringement against any Full-Converter product that includes a GE Convertteam converter, and that it would not seek any remedy against such products. CX-0388 at 1; RX-0934C.0004; GE Rep. Sub. at 2, 19.

GE argued to the ALJ that all of the Accused DFIG and Accused Full-Converter Products infringe claims 1, 6, and 12 of the '985 patent and claim 1 of the '705 patent, but argued that only the Accused Full-Converter Products with the earlier versions of software infringe claims 29, 30, 33-35, and 37 of the '985 patent. Final ID at 10. As discussed above, the parties agreed that the Redesigned Full-Converter Products do not infringe claims 29, 30, 33-35, and 37 of the '985 patent. GE Init. Sub. at 3-5; SGRE Init. Sub. at 7. SGRE did not challenge the Final ID's finding that SGRE's Accused Full-Converter Products using earlier versions of software violate section 337 with respect to claims 29, 30, 33-35, and 37 of the '985 patent.

D. The Domestic Industry Products

The ALJ found that GE satisfied the economic and technical prongs of domestic industry requirement through investments in its products utilizing its 1 MW and 2 MW platforms. Order No. 23 (Apr. 26, 2021), *unreviewed by Comm'n* Notice (May 26, 2021) (economic prong); Final ID at 17-18, 59-77, 114-18 (technical prong). Specifically, the Final ID found that GE's domestic industry products using GE's 30 newton meter pitch control system practice claims 1, 6, and 29 of the '985 patent and that all of its domestic industry products practice claim 15 of

the '985 patent. Final ID at 59-77. The Final ID also found that all of the domestic industry products practice claim 1 of the '705 patent, although the Final ID also found that GE could not satisfy the domestic industry requirement with respect to that claim because it is directed to ineligible subject matter.

II. COMMISSION REVIEW OF THE ID

When the Commission reviews an initial determination, in whole or in part, it reviews the determination *de novo*. *Certain Soft-Edged Trampolines and Components Thereof*, Inv. No. 337-TA-908, Comm'n Op. at 4 (May 1, 2015). Upon review, the "Commission has 'all the powers which it would have in making the initial determination,' except where the issues are limited on notice or by rule." *Certain Flash Memory Circuits & Prods. Containing Same*, Inv. No. 337-TA-382, USITC Pub. No. 3046, Comm'n Op. at 9–10 (July 1997) (quoting *Certain Acid-Washed Denim Garments & Accessories*, Inv. No. 337-TA-324, Comm'n Op. at 5 (Nov. 1992)). With respect to the issues under review, "the Commission may affirm, reverse, modify, set aside or remand for further proceedings, in whole or in part, the initial determination of the administrative law judge." 19 C.F.R. § 210.45(c). The Commission also "may take no position on specific issues or portions of the initial determination," and "may make any finding or conclusions that in its judgment are proper based on the record in the proceeding." *Id.*; *see also Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984).

III. ANALYSIS

The Commission has determined that SGRE violated section 337 because the use of the Accused Full-Converter Products with ABB Converters using earlier versions of software infringe claims 29, 30, 33-35, and 37 of the '985 patent and that all other elements of section 337 were satisfied. The Commission declined to review the Final ID's findings in these respects. On

review, the Commission has determined that SGRE has not violated section 337 with respect to claims 1, 6, and 12 of the '985 patent. Specifically, the Commission finds that (1) GE failed to show that any accused product satisfies the limitation “a second mode of operation comprising the low voltage event” found in claims 1, 6, and 12 of the '985 patent; (2) GE failed to show that any accused DFIG product satisfies the limitation “turbine controller causes the blade pitch control system to vary the pitch of the one or more blades” found in claims 1, 6, and 12 of the '985 patent; and (3) the ALJ erred in finding that all Accused Products and all Accused Full-Converter Products infringe claims 29, 30, 33-35, and 37 of the '985 patent. The record does not support the ID’s finding that full-converter wind turbine generators with later software and DFIG Products infringe claims 29, 30, 33-35, and 37 of the '985 patent.

A. “Second Mode of Operation Comprising the Low Voltage Event . . .”

1. Final ID

The Final ID found that GE showed that all of the Accused Products satisfied the limitation “a second mode of operation comprising the low voltage event” found in claims 1, 6, and 12⁴ of the '985 patent. The Final ID found that because the claim phrase “a second mode of operation comprising the low voltage event” uses the term “comprising,” this means that “the second mode of operation must include the low voltage event but is not limited to only the time of the low voltage event.” Final ID at 45; *see also id.* at 46 (rejecting SGRE’s argument that “the claimed second mode of operation must consist *solely* of the low voltage event”). In other words, the ID finds that the duration of the “second mode of operation” must include the occurrence of a low voltage event, but can also include times outside of the occurrence of the

⁴ Claim 12 depends on and incorporates claim 1, so all analysis of claim 1 applies equally to claim 12.

low voltage event. The Final ID also found that GE did not make a clear and unmistakable disavowal of claim scope during patent prosecution such that the “second mode of operation” must consist solely of the “low voltage event.” *Id.* at 46.

The claims describe a “low voltage event” based on the percentage of the voltage at the generator’s output terminals relative to the rated voltage for the generator—claim 1 states that a low voltage event is “less than 50%” and claim 6 states that a low voltage event is “between 15% and 50%” of the rated voltage of the generator.⁵ JX-0001. The Final ID found that the undisputed evidence showed that the Accused Full-Converter Products transition to a “a second mode of operation” when the generator output is 90% of the generator’s rated output, and that the Accused DFIG Products transition to “a second mode of operation” when the generator output is 85% of the generator’s rated output. Final ID at 38-39, 44, 47. These values of 90% and 85% do not fall within the low voltage events of “less than 50%” and “between 15% and 50%” described in claims 1 and 6. The Final ID, however, found that the above functionality satisfied the claim language. *Id.* at 44-45. The Final ID does not explain why the evidence showed that “a second mode of operation comprising the low voltage event” limitation is satisfied. In reviewing the evidence cited in the ID, it appears that this finding might be based on the Final ID’s view that the “second mode of operation” limitation can be satisfied when the Accused DFIG Products transition to a second mode of operation at a grid voltage of below 85% of the nominal voltage and when the Accused Full-Converter Products transition to a second

⁵ Claim 1 recites “a low voltage event in which the generator remains connected to a grid when the voltage at the output terminals of the generator is less than 50% of a rated voltage of the generator” and claim 6 recites “a low voltage event comprises a voltage at the output terminals of the generator between 15% and 50% of a rated voltage of the generator.” JX-0001 at claims 1 and 6. During the prosecution of the claims, GE explained that “low voltage is defined as a voltage in which the grid voltage drops to less than 50% (amended claim 1), or to 15-50% (amended claim 6) of a rated voltage of the generator.” JX-0150.0015.

mode of operation at a grid voltage below 90% of the nominal voltage, even though the transition from the first to the second operating mode does not occur precisely at the point when the grid voltage reaches the levels defined as a low voltage event in claim 1 (“less than less than 50% of a rated voltage of the generator”) or claim 6 (“between 15% and 50% of a rated voltage of the generator.”). *See id.* at 44-45.

2. Petition and Response

SGRE contends that the claim language and prosecution history require that the “second mode of operation” include the “low voltage event,” and thus none of the Accused Products satisfy this limitation because they transition to the alleged “second mode of operation” outside of the claimed voltage ranges of the low voltage event, *i.e.*, the Accused Products transition at 90% and 85% whereas the claims require a transition at “less than 50%” or “between 15% and 50%.” SGRE Pet. at 6-12.

GE contends that the ALJ correctly found that the “second mode of operation” is not limited to the low voltage event and that the prosecution history did not clearly and unmistakably require the second mode of operation be limited to the low voltage event. GE Resp. at 6-10. As GE explains:

This means for example, that a mode of operation that is used only when the voltage is between 70-100% **would not** include the low voltage event, and therefore, would not be a “mode of operation **comprising** the low voltage event” (*i.e.*, it would not be a low voltage mode). In contrast, the second mode of operation in the Accused Products is used when the voltage is between 0-85% and 0-90%, and therefore, this second mode of operation clearly includes the low voltage event (<50% and 15-50%).

Id. at 9 n.4 (emphasis in original).

3. Analysis

The Commission finds that the Final ID erred in its interpretation of “a second mode of operation comprising the low voltage event,” and therefore reverses that finding. Under the proper interpretation of the limitation, the Commission finds that GE failed to show that any Accused Product satisfies the limitation “a second mode of operation comprising the low voltage event” of claims 1, 6, and 12.

Claims 1 and 6 require detection of a transition to a “second mode of operation” comprising a “low voltage event” of “less than 50%” and “between 15% and 50%,” respectively. The Final ID found that the use of the term “comprising” meant that the “second mode of operation must include the low voltage event but is not limited to only the time of the low voltage event.” Final ID at 45. The Federal Circuit, however, has held that the term “comprising” is “generally understood to mean that the claims do not exclude the presence in the accused device or method of factors in addition to those explicitly recited.” *CIAS, Inc. v. Alliance Gaming Corp.*, 504 F.3d 1356, 1360 (Fed. Cir. 2007). The use of “comprising” in “second mode of operation comprising the low voltage event” therefore does limit the claimed “second mode of operation” to the duration of the explicitly recited “low voltage event.”⁶ Accordingly, the claimed detection of a transition to “a second mode of operation” requires the presence of a low voltage event—*i.e.*, a rated voltage of the generator of “less than 50%” and “between 15% and 50%,” respectively. The claims do not cover an alleged “second mode of operation” that occurs outside of those ranges.

⁶ The use of “comprising” permits the claimed “second mode of operation” to have unrecited features in addition to the explicitly recited low voltage event. The claim does not, however, cover a “second mode of operation” that occurs outside of the low voltage event.

PUBLIC VERSION

The Final ID also found that GE did not make a clear and unmistakable disavowal of claim scope during patent prosecution such that the “second mode of operation” must consist solely of the “low voltage event.” Final ID at 46. While the issue of disclaimer is not relevant because the Commission finds that the plain language of the claim limits the “second mode of operation” to the time of the “low voltage event,” the Commission finds that the prosecution history supports the Commission’s interpretation of the plain language of the claims. Claims 1 and 6, as originally issued, did not recite a transition to a “second mode of operation” or “low voltage event,” but instead recited “a transition from the first mode of operation.” RX-0641.0004. In response to a patent examiner’s reexamination office action stating that the original claim language did not specify that the transition was based on detecting a low voltage event, the applicant argued:

Thus, the claim specifically requires that the pitch of the blades is controlled in response to the detection of **a transition from the first mode of operation to the only other mode required by claim 1, i.e., “the low voltage event.”** Accordingly, the transition from the first mode of operation should be limited to a transition to a low voltage mode of operation.

Id. at .0016-17 (emphasis added). The patent examiner rejected that reasoning on the grounds that no such limitations were in the claim and suggested that GE amend its claims if it wanted to claim a transition to a low voltage event. RX-0643.0012-13. GE then amended its claims 1 and 6 to specify “detection of a transition from the first mode of operation to a second mode of operation comprising the low voltage event,” and to specify numerical values for the low voltage event (“less than 50%” for claim 1 and “between 15% and 50%” for claim 6). JX-0150.0006. GE explained that the amendments “require [that] the transition from the first mode of operation be a transition to a low voltage mode.” *Id.* at .0015. The Commission therefore finds that the

PUBLIC VERSION

prosecution history supports the Commission’s finding that claims 1 and 6 require a detection of a transition to a second mode of operation which requires, and is limited to, a low voltage event.

The un rebutted evidence demonstrates that GE failed to show that any Accused Product satisfies the limitation “a second mode of operation comprising a low voltage event.” As discussed above, Claims 1 and 6 require detection of a transition to a “second mode of operation” comprising a “low voltage event” of “less than 50%” and “between 15% and 50%,” respectively. The Final ID, however, found that the Accused Full-Converter and DFIG Products transition to an alleged second mode of operation at 90% and 85%, respectively. Final ID at 38-39, 44-45.⁷ Accordingly, although the claims require “the detection of a transition from the first mode of operation to a second mode of operation comprising the low voltage event” that is defined to be “less than 50%” and “between 15% and 50%,” respectively, the Accused Products transition to an alleged second mode of operation that does not include the required “low voltage event,” as 90% and 85% do not fall within “less than 50%” and “between 15% and 50%.”

In other words, the Final ID found that the Accused Products have a blade pitch control system that varies the pitch of the blades in response to the voltage transitioning to 90% and 85%, respectively. Final ID at 44, 47. Claims 1 and 6, however, require that the “blade pitch control system . . . vary the pitch of the one or more blades in response to the transition” to the “second mode of operation comprising the low voltage event,” *i.e.*, voltages of “less than 50%” and “between 15% and 50%,” respectively. Varying the blades when the voltage transitions to 90% and 85% does not satisfy the claim limitations requiring the varying of blades when the

⁷ See also Tr. 276:3-14 (Habetler) (explaining that the Accused DFIG Products transition to a second mode of operation at a voltage of 85%); Tr. 731:24-734:24 (Brown) (same); Tr. 292:6-12 (Habetler) (explaining that the Accused Full-Converter Products transition to a second mode of operation at a voltage of 90%); Tr. 579:3-580:1 (Lund) (same); Tr. 730:5-731:19 (Brown) (same).

voltage transitions to “less than 50%” and “between 15% and 50%,” and to find otherwise would render those claim limitations meaningless. *See, e.g., Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 951 (Fed. Cir. 2006) (stating “the principle that claim language should not be treated as meaningless”). Accordingly, the Commission finds that GE failed to show that this limitation is satisfied, and therefore finds that GE failed to show infringement by any of the Accused Products for claims 1, 6, and 12 of the ’985 patent.

B. “Turbine Controller Causes the Blade Pitch Control System to Vary the Pitch of the One or More Blades”

1. Final ID

The Final ID found that all of the Accused Products satisfied the limitation “turbine controller causes the blade pitch control system to vary the pitch of the one or more blades” of claims 1, 6, and 12 of the ’985 patent. Final ID at 47-50. For the Accused Full-Converter Products, the Final ID found that the transition to a second mode of operation occurs when the “FRT_detect” signal transitions from FALSE to TRUE, which in turn causes the turbine controller to send a [REDACTED] to the [REDACTED]. *Id.* at 47. For the Accused DFIG Products, the Final ID found that the transition to a second mode of operation occurs when the “CcuDipOn” signal transitions from FALSE to TRUE, which in turn causes the turbine controller to send a [REDACTED] that causes the system to [REDACTED]. *Id.* at 47-48. [REDACTED] which can “cause the pitch to react more slowly during recovery from the low-voltage event than it otherwise would.” *Id.* at 48.

2. Petition and Response

SGRE does not dispute that the Accused Full-Converter Products satisfy this limitation

but argues that the Final ID erred by finding that the Accused DFIG Products satisfy the limitation. SGRE Pet. at 13-20. SGRE argues that the claims require that the system “vary the pitch” of the blades in response to the mode transition, which is not satisfied by [REDACTED] in response to the alleged mode transition. *Id.* at 15-16 (emphasis added). SGRE argues that the Accused DFIG Products determine to vary the pitch of the blades [REDACTED] regardless of mode. *Id.* at 13-14.

GE contends that the ALJ correctly found that the Accused DFIG Products satisfied the limitation. GE Resp. at 11-16. GE argues that the claim does not require that the pitch be varied exclusively in response to the mode transition, and the claimed “vary the pitch” includes [REDACTED]. *Id.* at 12-13.

3. Analysis

The Commission finds that the Final ID erred in determining that when the Accused DFIG Products cause the blade pitch control system to [REDACTED], they satisfy the limitation “turbine controller causes the blade pitch control system to vary the pitch of the one or more blades” of claims 1, 6, and 12 of the ’985 patent. The Commission therefore reverses the Final ID and finds that GE failed to show that the Accused DFIG Products satisfy the limitation.

Claims 1, 6, and 12 of the ’985 patent all require that the blade pitch control system “vary the pitch” in response to the detection of the mode transition:

wherein in response to detection of a transition from the first mode of operation to a second mode of operation comprising the low voltage event the turbine controller causes the blade pitch control system to vary the pitch of the one or more blades in response to the transition.

JX-0001 (emphasis added). As the Final ID found, there is no dispute that the transition to the second mode of operation in the Accused DFIG Products causes [REDACTED]

[REDACTED], but not a variation in **pitch**. Final ID at 48. Because [REDACTED] does not constitute varying the pitch, GE failed to show that the Accused DFIG Products practice the limitation.

Nor does the Final ID rely on any evidence suggesting that the Accused DFIG Products vary the pitch of the blades in response to the mode transition. The Final ID relied on the testimony of SGRE employee Jesus Arellano, but he simply testified that the transition of the CcuDipOn signal causes the blade pitch control system to [REDACTED] [REDACTED] JX-0158C (Arellano Depo. Tr.) at 46:17-18, and that, regardless of whether there is a low voltage event, the system uses the same pitch control algorithm based on [REDACTED], Tr. (Arellano) 610:1-3, 610:11-612:16. The Final ID also relied upon an SGRE requirements document,⁸ but that document also states that “[w]hen a voltage dip is detected . . . [REDACTED].” CX-0136C (SG 4.X Requirements Document) at .0060-.0061. The Final ID finally cited an SGRE Voltage Dip Simulations document that states that [REDACTED] but the mere fact that an increase in pitch value is correlated with a voltage dip fails to show that the voltage dip transition caused “the blade pitch control system to vary the pitch . . . in response to the transition” as required by the claims. JX-0151C.0003. Indeed, that same document states that a voltage dip may not cause any change in pitch. JX-0151C.0013 [REDACTED] [REDACTED] [REDACTED]). Accordingly, there is no evidence that the Accused DFIG Products

⁸ Both the Final ID and GE state that the requirements document describes the creation of an [REDACTED] but neither explains how such creation satisfies the claim limitation. Final ID at 49; GE Resp. at 14. GE’s expert also failed to explain why the [REDACTED] [REDACTED] shows that the limitation is satisfied. Tr. (Habetler) 280:3-24.

“vary the pitch . . . in response to the transition,” as required by claims 1, 6, and 12 of the ’985 patent.

GE argues that the claim language is satisfied as long as the blade pitch varies for any reason when the system switches modes of operation, and that it does not matter if the Accused DFIG Products “will vary blade pitch identically regardless of whether CCUDipOn is asserted or not.” GE Resp. at 11-14. GE is incorrect. The claims require that the blade pitch control system “vary the pitch . . . in response to the transition” to the second mode of operation. If a variation in blade pitch is unrelated to the transition between modes, then the pitch variation is not “in response to the transition” as required by the claims. GE also argues that there is no requirement that “blade pitch is varied exclusively in response to detection of the transition,” GE Resp. at 12, but GE failed to show that blade pitch is in any way varied in response to detection of the transition. Because GE failed to show that the Accused DFIG Products “vary the pitch . . . in response to the transition,” GE failed to demonstrate that those products infringe claims 1, 6, and 12 of the ’985 patent.

C. Infringement Findings Regarding Claims 29, 30, 33-35, and 37 of the ’985 Patent

1. Final ID

The Final ID expressly recognized that GE asserted claims 29, 30, 33-35, and 37 of the ’985 patent against only the Accused Full-Converter Products with the earlier software. Final ID at 10-12. The Final ID’s infringement analysis, however, generally referred to the Accused Full-Converter Products as a whole, *id.* at 51-55, and the Final ID’s summary findings stated that all Accused Products infringe claims 29, 30, 33-35, and 37 of the ’985 patent. *Id.* at 147.

2. Petition and Response

SGRE argues that the Final ID erred in finding that the use of all Accused Full-Converter

Products and all Accused Products infringes claims 29, 30, 33-35, and 37 of the '985 patent. SGRE Pet. at 32-34. SGRE does not dispute that the use of Accused Full-Converter Products with earlier software sold after July 14, 2020 infringe those claims, but argues that the Commission should vacate the findings that the use of Accused DFIG Products and the Redesigned Full-Converter Products infringe the claims, as GE did not even accuse those products of infringement. *Id.* GE acknowledges that it did not assert that the use of Redesigned Full-Converter Products infringes claims 29, 30, 33-35, and 37 of '985 patent. GE Resp. at 27-28.

3. Analysis

The Commission has determined to vacate the Final ID's finding that the use of Accused DFIG Products and the Redesigned Full-Converter Products directly or indirectly infringe claims 29, 30, 33-35, and 37 of the '985 patent. Although the Final ID states that the use of the "Accused Full-Converter Products" and "all Accused Products" infringe claims 29, 30, 33-35, and 37 of the '985 patent, Final ID at 51-54, 147, the Final ID also acknowledges that GE never accused the use of the Accused DFIG Products and the Redesigned Full-Converter Products of infringing claims 29, 30, 33-35, and 37 of the '985 patent, Final ID at 10; GE Initial Post-Hearing Br. at 6 (Jul 2, 2021). The Final ID therefore should have limited its infringement findings for those claims to the products actually accused—Accused Full-Converter Products that include an ABB converter equipped with earlier versions of software—and should not have extended its infringement findings to all "Accused Full-Converter Products" or "all Accused Products." Accordingly, the Commission finds that record and the Final ID support a finding that the use of the Accused Full-Converter Products that include an ABB converter equipped with earlier versions of software violate section 337 with respect to claims 29, 30, 33-35, and 37

of the '985 patent, but that the record and Final ID do not support a finding that the use of either the Accused DFIG Products or the Accused Full-Converter Products that include an ABB converter equipped with later versions of software (*i.e.*, the Redesigned Full-Converter Products) violate section 337 with respect to those claims.

IV. REMEDY, THE PUBLIC INTEREST, AND BONDING

Having found a violation of Section 337 in this investigation, the Commission provides its determinations as to the appropriate remedy to address the violation found, the effects of a remedy on the public interest considerations, and the amount of bond to be imposed on infringing imports during the period of Presidential review.

A. Remedy

The Commission has “broad discretion in selecting the form, scope, and extent of the remedy.” *Viscofan, S.A. v. US. Int’l Trade Comm’n*, 787 F.2d 544, 548 (Fed. Cir. 1986).

1. Limited Exclusion Order

Section 337(d)(1) provides that “[i]f the Commission determines, as a result of an investigation under this section, that there is a violation of this section, it shall direct that the articles concerned, imported by any person violating the provision of this section, be excluded from entry into the United States, unless, after considering the [public interest], it finds that such articles should not be excluded from entry.” 19 U.S.C. § 1337(d)(1). Here, as discussed *supra*, the Commission finds that GE established a violation with respect to claims 29, 30, 33-35, and 37 of the '985 patent. The Commission has determined that an appropriate remedy is the issuance of a limited exclusion order (“LEO”) with respect to SGRE regarding claims 29, 30, 33-35, and 37 of the '985 patent. As discussed *infra*, however, the Commission finds that the public interest factors warrant permitting the importation of SGRE products for the purposes of service

and repair of SGRE wind turbine generators already in operation in the United States. The Commission also resolves the parties' various disputes over the remedy below.

a. Scope of the Remedy

GE argues that the LEO should bar SGRE from importing any component part of the accused products into the United States. GE Rep. Sub. at 13. SGRE contends that an LEO should not cover components of wind turbine generators because the “asserted claims of the ’985 Patent do not cover individual WTG [wind turbine generator] components. Instead, they are infringed only when generators, uninterruptable power supplies, turbine controllers and blade pitch control systems are assembled into a WTG as recited in claims 1 or 6, or when an operating WTG performs the method steps of claim 29 and disconnects WTG component(s) during a low voltage event.” SGRE Init. Sub. 27-28. SGRE also argues that GE’s proposed LEO extends beyond the permissible scope of the investigation by referring to “variable speed wind turbine generators *and components thereof*” rather than limiting the scope of the LEO strictly to the plain language description of the investigation provided by GE and used to define the scope of the investigation. SGRE Rep. Sub. at 17-19.

As recited above, no party argued that the scope of any remedy should extend beyond the scope of the investigation. The scope of the investigation set forth in the notice of investigation was based on the complaint allegations applicable to every claim of the ’985 and ’705 patents asserted in the complaint—“variable speed wind turbine generators having low and zero voltage ride through capability and components thereof, namely generators, power converters, uninterruptible power supplies, turbine controllers, blade pitch control systems, and converter controllers.” Notice of Investigation, 85 Fed. Reg. 55492-93 (Sept. 8, 2020). Accordingly, the Commission finds that its remedies cover the components recited in the notice of investigation

(*i.e.*, generators, power converters, uninterruptible power supplies, turbine controllers, blade pitch control systems, and converter controllers) that directly or indirectly infringe claims 29, 30, 33-35, and 37 of the '985 patent.

b. Exemption for Service and Repair

The ALJ recommended that the LEO not contain an exception for the service and repair of SGRE wind turbine generators because SGRE failed to show evidence that its wind turbine generators could not be serviced by third parties or with domestic components. Recommended Determination at 149.⁹ The ALJ's recommendation did not include consideration of the public interest factors because the Commission did not delegate the public interest to the ALJ in the notice of investigation.¹⁰

SGRE requests that the LEO contain an exemption to allow SGRE to service and repair its existing wind turbine generators in the United States. SGRE Init. Sub. at 11-16; SGRE Rep. Sub. at 5. GE argues that such an exemption is not necessary because GE or other entities can service SGRE's wind turbine generators. GE Init. Sub. at 7-8; 14-19. Several third party U.S. wind farm operators stated that certain SGRE components are only available from SGRE, and that a remedy that prevents the wind farms from accessing these components for servicing and repairing their SGRE-manufactured wind turbine generators would cost the wind farm operators millions of dollars in lost revenue and lost tax credits.¹¹ RWE Renewables America LLC, for

⁹ The ALJ issued his Recommended Determination in the same document as the Final ID on pages 148-153.

¹⁰ No public interest comments were received in response to the Commission's notice soliciting comments relating to any public interest issues raised by the Complaint, 85 Fed. Reg. 47,810-11 (August 6, 2020).

¹¹ Algonquin Power & Utilities Corp Sub. at 2-3 (Oct. 6, 2021); Allele Clean Energy Sub. at 1-2 (Oct. 6, 2021); Avangrid Renewables LLC Sub. at 1-2 (Oct. 6, 2021); Clearway Energy Group LLC Sub. at 1-2 (Oct. 6, 2021); MidAmerican Energy Company Sub. at 1-2 (Oct. 6, 2021); RWE

PUBLIC VERSION

example, states that it has invested more than \$1 billion in turbines, land, site preparation, and supporting infrastructure for its SGRE wind turbine generators and for SGRE to provide service and maintenance for those wind turbine generators, and that there would be devastating losses to those investments if they cannot obtain SGRE components. RWE Renewables Americas LLC Sub. at 2.

Under appropriate circumstances, the Commission has granted service and repair exemptions in its remedial orders. See *Certain Robotic Vacuum Cleaning Devices*, Inv. No. 337-TA-1057, Comm'n Op. at 58-59 and nn.25-27 (Feb. 1, 2019) (collecting cases). As discussed in the public interest section below, the Commission finds, based on consideration of the public interest factors, that the remedy should have an exemption for SGRE to import components for the purposes of service and repair of its existing infringing wind turbine generators.

GE acknowledges that for more complicated service and repair issues such as blade, generator, rotor or converter replacement, neither GE nor third-parties could replace damaged or aging parts in infringing wind turbine generators without the imported SGRE proprietary components and that addressing these service and repair issues without access to infringing components would require repowering the wind turbine generator. GE Init. Sub. at 15. The parties agree that repowering involves dismantling much of the existing wind turbine generator and replacing it with new components. GE Init. Sub. at 18 (repowering involves replacing the blade, generator, rotor, and converter); SGRE Init. Sub. at 19-20 (stating that repowering involves replacing the nacelle, generator, and blades, and “is a major undertaking akin to installing a new WTG”). Accordingly, the Commission finds that, in the event an existing SGRE wind turbine generator needs more than a “basic” repair, there is no dispute that the issuance of a

Renewables Americas LLC at 1-2 (Oct. 6, 2021).

remedy without an exemption for service and repair would require that wind farm operators repower wind turbine generators that could otherwise be repaired in the absence of the remedy.

The record also shows that repowering is far more expensive than a repair involving the replacement of a SGRE component. GE did not dispute that repowering a single wind turbine generator costs more than [REDACTED]. GE Rep. Sub. at 16. GE also did not dispute SGRE's contention that replacement parts are far less expensive: power converters cost [REDACTED], an uninterruptible power supply costs [REDACTED], and a generator costs [REDACTED]. SGRE Init. Sub. at 20. GE also did not dispute MidAmerican Energy Company's statement that GE does not possess an off-the-shelf solution to repower SGRE wind turbine generators, and thus repowering an SGRE wind turbine generator would likely involve substantial engineering costs and delays of up to two years. MidAmerica Energy Company Supplemental Sub. at 2 (Dec. 7, 2021). Accordingly, the Commission finds no dispute that the issuance of a remedy without an exemption for service and repair would impose significant costs on wind farm operators that need more than a "basic" repair of an existing infringing wind turbine generator.

c. Exemption to Complete Pending Wind Turbine Projects

SGRE requests that the LEO contain an exemption to allow SGRE to complete its construction of new wind turbine generator projects that were sold prior to the issuance of the LEO. SGRE Init. Sub. at 11. SGRE, however, acknowledges that if the Commission were to issue a remedy that impacts only Accused Full-Converter Products with earlier versions of the software, then such a remedy would not impact any of SGRE's pending new construction projects because all such projects utilize later versions of the software.¹² *Id.* at 16-17

¹² SGRE identifies its [REDACTED] new Full-Converter projects and its [REDACTED] new DFIG projects in Exhibits 2 and 4 respectively to its initial remedy submission.

GE also acknowledges that, if the Commission were to issue a remedy only with respect to claims 29, 30, 33-35, and 37 of the '985 patent, the only "impacted products would be the 'Accused Full-Converter Products' identified as the SWT 2.3-108, SWT 2.7-129, and SWT 2.9-129 wind turbine models with ABB power converters with versions of software prior to version PG_V30_VS_201202." GE Init. Sub. at 3; *see also id.* at 4-5.

The Commission has determined to issue an LEO with respect to claims 29, 30, 33-35, and 37 of the '985 patent only, and both parties agree that such a remedy impacts only Accused Full-Converter Products with earlier versions of the software—versions of software prior to version PG_V30_VS_201202. GE Init Sub. at 3-5; SGRE Init. Sub. at 16-17. SGRE represented that its pending new construction projects all utilize later versions of software. SGRE Init. Sub. at 17. Based on the parties' representations, the LEO does not impact any of SGRE's █████ pending projects, and thus there is no need for an exemption for such projects.

d. Exemption for Licensed Wind Turbines

SGRE also requests that the LEO contain an exemption for SGRE products that are subject to a license between GE and SGRE's predecessor Gamesa. SGRE Init. Sub. at 5-7; SGRE Rep. Sub. at 19-20. SGRE contends that GE's infringement claims under the '985 Patent are limited by a license agreement (JX-0050C) under which SGRE was authorized by GE to make, sell, and import wind turbine generators into the United States until July 14, 2020. SGRE Init. Sub. at 5. SGRE states that █████ SGRE wind turbine generators were sold during the term of the GE license and identifies the specific wind turbine projects whose wind turbine generators are licensed in Exhibits 1-4 to its initial submission. *Id.* GE replies that it does not object to "permissible repair for products found to be covered under the Gamesa License." GE Rep. Sub. at 4 n.2. GE, however, contends that SGRE is attempting to improperly extend the license to

products that are not covered by the license and faults SGRE for failing to litigate its licensing defense during the investigation. GE Rep. Sub. at 4, 16-19.

The Commission finds that there is no need for an exemption for the importation of products for use with licensed wind turbine generators. The standard Commission LEO already contains a provision that permits the importation of articles “under license of the patent owner or as provided by law.” The Commission has determined to adopt that language for the LEO in this investigation, and therefore SGRE is permitted under the LEO to import articles for licensed uses to the extent they are proven to be licensed.¹³

e. Exemption for Wind Turbine Generators with Converteam Components

SGRE requests that the LEO not cover any articles used to service and repair SGRE wind turbine generators containing Converteam power conversion units. SGRE Init. Sub. at 7-8.

SGRE explains that GE purchased Converteam on September 2, 2011, and that GE’s Converteam power converters are used in █████ of its Full-Converter wind turbine generators as identified in Exhibits 1 and 2 of its initial submission. *Id.* at 20. SGRE states that GE, the owner of Converteam, represented that it will not seek a remedial order against components used to service wind turbine generators with Converteam power conversion units. *Id.* at 7 (citing RX-0934C.0004). GE replied that it “does not object to SGRE servicing wind turbine generators that include a Converteam power converter.” GE Rep. Sub. at 2.

As discussed above, the Commission finds that its consideration of the public interest factors warrants creating an exemption to the remedy for the purpose of service and repair of

¹³ The parties debate the scope of the GE-Gamesa license on several fronts. The Commission finds that there is insufficient evidence in the record to resolve those issues at this time. Ancillary proceedings at the Commission may be requested, as appropriate, to address the scope of Commission remedial orders and related questions of licensing. *See* 19 C.F.R. §§ 210.76, 210.79.

existing wind turbines generators covered by the order, which inherently includes an exemption for existing infringing SGRE wind turbine generators with Converteam power converters.

Accordingly, there is no need to create a separate exemption for such generators. Nevertheless, because GE stated that it would not seek a remedy for components relating to the service and repair of SGRE wind turbines with Converteam power conversion units,¹⁴ the Commission clarifies that the remedy does not cover these products.

2. Cease and Desist Order

Section 337(f)(1) provides that in addition to, or in lieu of, the issuance of an exclusion order, the Commission may issue a cease and desist order (“CDO”) as a remedy for violation of section 337. *See* 19 U.S.C. § 1337(f)(1). CDOs are generally issued when, with respect to the imported infringing products, respondents maintain commercially significant inventories in the United States or have significant domestic operations that could undercut the remedy provided by an exclusion order.¹⁵ *See, e.g., Certain Table Saws Incorporating Active Injury Mitigation Technology & Components Thereof (“Table Saws”),* Inv. No. 337-TA-965, Comm’n Op. at 4-6 (Feb. 1, 2017); *Certain Protective Cases & Components Thereof,* Inv. No. 337-TA-780, USITC Pub. No. 4405, Comm’n Op. at 28 (Nov. 19, 2012) (citing *Certain Laser Bar Code Scanners & Scan Engines, Components Thereof & Prods. Containing Same,* Inv. No. 337-TA-551, Comm’n Op. at 22 (June 24, 2007)). Complainants bear the burden on this issue. “A complainant seeking

¹⁴ RX-0934C.0004; GE Rep. Sub. at 2, 4.n.2.

¹⁵ When the presence of infringing domestic inventory or domestic operations is asserted as the basis for a CDO under section 337(f)(1), Commissioner Schmidlein does not adopt the view that the inventory or domestic operations needs to be “commercially significant” in order to issue the CDO. *See, e.g., Certain Magnetic Tape Cartridges and Components Thereof,* Inv. No. 337-TA-1058, Comm’n Op. at 65, n.24 (Mar. 25, 2019); *Table Saws,* Comm’n Op. at 6-7, n.2 (Feb. 1, 2017). In Commissioner Schmidlein’s view, the presence of some infringing domestic inventory or domestic operations, regardless of its commercial significance, provides a basis to issue a CDO. *Id.*

PUBLIC VERSION

a cease and desist order must demonstrate, based on the record, that this remedy is necessary to address the violation found in the investigation so as to not undercut the relief provided by the exclusion order.” *Table Saws*, Comm’n Op. at 5 (citing *Certain Integrated Repeaters, Switches, Transceivers, & Prods. Containing Same*, Inv. No. 337-TA-435, USITC Pub. No. 3547 (Oct. 2002), Comm’n Op. at 27 (Aug. 16, 2002); *see also* H.R. REP.No. 100-40, at 160 (1987)).

The ALJ recommended that the Commission decline to issue a cease and desist order. RD at 151-52. The ALJ found that GE simply stated that a single article can be commercially significant but presented no evidence or argument that SGRE’s domestic inventory was commercially significant. *Id.*

GE argues that a CDO is appropriate because SGRE has commercially significant inventory and significant domestic activity. GE Init. Sub. at 29-32. GE argues that SGRE stipulated that it had a domestic inventory of Full-Converter components valued at [REDACTED] and of DFIG components valued at [REDACTED], which is significant because it is comparable to the cost of a new wind turbine generator, which ranges from [REDACTED]. *Id.* at 29-30. GE also argues that SGRE has significant domestic operations that could undercut a remedy by servicing approximately [REDACTED] wind turbines across the United States. *Id.* at 31.

SGRE argues that the ALJ correctly recommended that no CDO be issued because GE failed to present any rationale to the ALJ why SGRE’s domestic inventory was significant, and therefore waived the issue. SGRE Rep. Sub. at 12-14. SGRE also argues that its domestic “inventories consist almost entirely of spare component parts which are intended for service and repair of already-commissioned WTGs, not for construction of new wind turbine generators” and that it has no inventories of assembled WTGs. SGRE Init. Sub. at 36-37. SGRE also explains that the inventories reflect [REDACTED] valued at [REDACTED] of which were for new

construction. *Id.* at 37. SGRE does not appear to contest GE’s assertion that the value of the inventories of parts for service and repair are commercially significant, but it does contend that its inventories of parts for new construction are not commercially significant. SGRE Rep. Sub. at 13. Regarding the parts for service and repair, SGRE states: “None of the parts in inventory infringes the ’985 Patent *per se*, and all of them have non-infringing uses, for example, in repairing the [REDACTED] licensed WTGs or the [REDACTED] WTGs that contain GE’s Convertteam converters.” *Id.* Thus, SGRE states that it was “inappropriate” for GE to “claim entitlement” to a CDO based on the parts in inventory. *Id.* Moreover, SGRE argues that “[b]ecause SGRE’s domestic operations are focused primarily on service and repair of existing WTGs and installation and commissioning of WTGs that already have been sold, such operations, even if significant, do not justify the issuance of a cease-and-desist order because public interest considerations strongly favor allowing SGRE to continue with those activities during the exclusion period.” SGRE Init. Sub. at 40. The Commission has determined to issue CDOs against all three SGRE respondents. The Commission finds that, based upon the record presented by GE, there is sufficient evidence that SGRE has a commercially significant inventory of components that could be used in the service and repair of infringing Full-Converter wind turbine generators and thereby undercut the effectiveness of the LEO. There appears to be no dispute that that SGRE maintains an inventory of [REDACTED] worth of potentially infringing components for Accused Full-Converter Products, and that a significant portion of these components could be used in connection with a turbine controller software version prior to PG_V30_VS_201202. GE Init. Sub. at 29-30. Although the components have non-infringing uses, for example, to repair licensed wind turbine generators or wind turbine generators that contain GE’s Convertteam converters, it cannot be known or predicted in advance which

particular components will be used for service or repair to a particular wind turbine generator until such time as the wind turbine generator breaks down or otherwise requires service. Thus, the extent to which the inventoried components will be used in an infringing manner is unknown at this time, but they could be used for service and repair of the more than [REDACTED] existing unlicensed and non-Convertteam Full-Converter wind turbine generators with earlier software until the patent expires in 16 months.¹⁶ The Commission therefore finds that, in the absence of evidence to estimate the volume and value of these components that SGRE could use in a non-infringing manner in SGRE's service and repair operations, CDOs are warranted here.¹⁷¹⁸ As discussed below, the Commission also finds, based on consideration of the public interest factors, that the CDOs should have an exemption for service and repair of existing wind turbine generators.

B. Public Interest

Section 337 requires the Commission, upon finding a violation of section 337, to issue an

¹⁶ SGRE identifies [REDACTED] Full-Converter wind turbine generators that use earlier versions of software in its initial submission on remedy, [REDACTED] of which SGRE identifies as under license or using Convertteam converters and therefore not covered by the order. SGRE Init. Sub. at 9, Ex 1; *see also supra* at 26-27, 30-31 (discussing the number of SGRE wind turbine generators implicated by the order). GE states that the '985 patent expires on May 6, 2023. GE Init. Sub. at 35.

¹⁷ The Commission notes that the CDO will not apply to use of inventoried components for non-infringing service and repairs, *i.e.*, service and repairs for DFIG wind turbines, Full-Converter Products using later versions of software, licensed wind turbines, or wind turbines with Convertteam components.

¹⁸ GE also argues that a CDO is warranted based on SGRE's domestic operations. GE Init. Sub. at 31. Although GE argues that SGRE services approximately [REDACTED] wind turbines in the United States at [REDACTED] locations, GE Init. Sub. at 31, neither GE nor SGRE provide an estimate of how much of that service directly or indirectly infringes claims 29, 30, 33-35, or 37 of the '985 patent. However, given the potential for such operations to involve infringing wind turbine generators, and that such operations would undermine the effectiveness of the LEO, we find a CDO is appropriate on this basis as well.

PUBLIC VERSION

LEO “unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such articles should not be excluded from entry.” 19 U.S.C. § 1337(d)(1).

Under appropriate facts and circumstances, the Commission may determine that no remedy should issue because of the adverse impacts on the public interest. *See, e.g., Certain Fluidized Supporting Apparatus & Components Thereof*, Inv. Nos. 337-TA-182/188, USITC Pub. 1667, Comm’n Op. at 1–2, 23–25 (Oct. 1984) (finding that the public interest warranted denying complainant’s requested relief). Moreover, when the circumstances of a particular investigation require, the Commission has tailored its relief in light of the statutory public interest factors. For example, the Commission has allowed continued importation for ongoing medical research, exempted service parts, grandfathered certain infringing products, and delayed the imposition of remedies to allow affected third-party consumers to transition to non-infringing products. *E.g., Certain Chemical Mechanical Planarization Slurries and Components Thereof*, Inv. No. 337-TA-1204, Comm’n Op. at 42–53 (Dec. 16) (delaying imposition of remedy); *Certain Microfluidic Devices*, Inv. No. 337-TA-1068, Comm’n Op. at 1, 22–48, 53–54 (analyzing the public interest, discussing applicable precedent, and ultimately issuing a tailored LEO and a tailored CDO); *Certain Road Milling Machines & Components Thereof*, Inv. No. 337-TA-1067, Comm’n Op. at 32–33 (July 18, 2019) (exempting service parts); *Certain Baseband Processor Chips & Chipsets, Transmitter, & Receiver (Radio) Chips, Power Control Chips, & Prods. Containing Same, Including Cellular Tel. Handsets*, Inv. No. 337-TA-543, USITC Pub. No. 4258, Comm’n Op. at 150–51 (Oct. 2011) (grandfathering certain products); *Certain Personal Data & Mobile Comm’n Devices & Related Software*, Inv. No. 337-TA-710,

PUBLIC VERSION

USITC Pub. No. 4331, Comm'n Op., at 72–73, 80–81 (June 2012) (delaying imposition of remedy).

The statute requires the Commission to consider and make findings on the public interest in every case in which a violation is found regardless of the quality or quantity of public interest information supplied by the parties. 19 U.S.C. § 1337(d)(1). Thus, the Commission publishes a notice inviting the parties as well as interested members of the public and interested government agencies to gather and present evidence on the public interest at multiple junctures in the proceeding. 19 U.S.C. § 1337(d)(1).

1. Public Health and Welfare

The first public interest factor involves considering the impact of a Commission remedy on the public health and welfare. 19 U.S.C. § 1337(d)(1), (f)(1). 19 U.S.C. § 1337(d)(1), (f)(1). SGRE contends that this factor weighs against issuing a remedy because there is a public health and welfare interest in maintaining the more than 22 GW of clean, renewable power provided by SGRE's existing wind turbine generators, and these existing wind turbine generators may fail if there is not an exemption from the remedy to import components for service and repair. SGRE Init. Sub. at 11-13. SGRE further argues that there is a public health and welfare interest in SGRE completing the construction of [REDACTED] wind turbine generators capable of generating another [REDACTED] GW of power that are already in progress because a remedy would increase costs and cause years of delay in providing clean energy to the United States. *Id.* at 13-14. SGRE argues that the U.S. government has recently prioritized the creation of clean energy infrastructure to reduce climate change, and that it is contrary to the public health and welfare to issue a remedy that prevents the continuing operation of existing clean energy infrastructure and prevent the completion of clean energy infrastructure already underway. SGRE Init. Sub. at 11-12.

PUBLIC VERSION

GE argues that SGRE overstates the impact of the remedy on the public health and welfare. GE Rep. Sub. at 6-8. With respect to projects under development, GE argues that there is no public interest in the █ GW of power that has not yet been constructed and GE or other WTG manufacturers would be capable of fulfilling these projects. *Id.* at 7-8. With respect to existing projects, GE argues that it or third parties could repair or repower the SGRE wind turbines. *Id.* at 7-8, 15. It further argues that it is a “virtual impossibility” that all SGRE’s existing wind turbine generators would fail simultaneously and that any impact to the “22 GW” of power production that SGRE identifies is speculative and would be limited to turbines that experienced a component failure and required service and repair which it asserts would have a “trivial MW’s and not GW’s” impact on power supply. *Id.* at 7.

Several non-party wind farm operators provided submissions stating that, if a remedy would prevent them from obtaining parts to service and repair their existing SGRE wind turbine generators, it would adversely affect their operations.¹⁹ In particular, these operators explain that wind turbine generators require “regular maintenance and repair” and that many of the necessary replacement parts and components are specifically designed for SRGE wind turbine generators and only available from SGRE.²⁰ They indicate that lack of access to replacement parts for SGRE wind turbine generators would result in lost energy generation attributable to wind turbine generators shut down for lack of access to replacement parts.²¹

¹⁹ The following seven wind farm operators filed public interest submissions: Algonquin Power & Utilities Corp; Allete Clean Energy; Avangrid Renewables; Clearway Energy Group LLC; Enel Green Power North America, Inc.; MidAmerican Energy Company; and RWE Renewable Americas LLC.

²⁰ Algonquin Power & Utilities Corp Sub. at 2; Allete Clean Energy Sub. at 2; Avangrid Renewables LLC Sub. at 2; Clearway Energy Group LLC Sub. at 2; MidAmerican Energy Company Sub. at 2-3; RWE Renewable Americas LLC Sub. at 2.

²¹ Algonquin Power & Utilities Corp Sub. at 2-3; Allete Clean Energy Sub. at 1-3; Clearway

PUBLIC VERSION

In its notice of review, the Commission asked the parties, if the Commission were to issue a remedy only with respect to articles that infringe claims 29, 30, 33-35 and 37 of the '985 patent, to identify what products and volume of products would be affected. 86 Fed. Reg. at 64525-27. SGRE responded and provided supporting material that there are presently 4,231 SGRE Accused Full-Converter wind turbine generators with an earlier version of software that practice claims 29, 30, 33-35 and 37 of the '985 patent and that have been commissioned and are in operation in the United States. SGRE Init. Sub. at 17, Ex. 1. Additionally, SGRE identified a subset of these WTGs consisting of [REDACTED] WTGs that are not subject to the remedy because they contain Converteam power conversion units supplied by GE and thus are authorized by GE under the Converteam acquisition. *See* SGRE Init. Sub. at 17, Ex. 1 (showing commissioned SGRE wind turbine generators with older version software and with Converteam components). Further, SGRE identified [REDACTED] earlier version software wind turbine generators that SGRE asserts are licensed and therefore should not be covered by an LEO. SGRE Init. Sub. at 10-11 (citing Exhibit 1 for the proposition that “all of these [REDACTED] Full Converter WTGs are commissioned and [REDACTED] of them are licensed.”); *see also* Ex. 1 (showing commissioned SGRE wind turbine generators with older version software that SGRE asserts are licensed).²² Most but not all of these wind turbine generators also use Converteam converters. SGRE identifies [REDACTED] commissioned wind turbine generators with earlier version software that are licensed and do not use Converteam converters. *Id.* at Ex. 1. Thus, according to SGRE, the [REDACTED] wind turbine

Energy Group LLC Sub. at 2-3; RWE Renewable Americas LLC Sub. at 3.

²² While GE agrees that wind turbine generators under license would not be subject to the order, it disputes which wind turbine generators are in fact under license. *See* GE Rep. Sub. at 4 n.2, 16-19. As noted above, however, while the parties debate the scope of the GE-Gamesa license on several fronts, the Commission finds that there is insufficient evidence in the record to resolve those issues at this time.

PUBLIC VERSION

generators using older versions of software include [REDACTED] wind turbine generators that are not covered by a remedy because they either contain a Converteam converter or are under license, leaving [REDACTED] wind turbine generators with earlier version software implicated by a remedy on articles covered by the order.²³

Using SGRE's estimate that its existing installed base of over 10,000 commissioned wind turbine generators generates 22 GW of power, these [REDACTED] SGRE wind turbine generators generate approximately [REDACTED] GW of power.²⁴ SGRE Init. Sub. at 12. The seven wind farm operators that submitted public interest statements operate collectively [REDACTED] SGRE wind turbine generators capable of generating more than [REDACTED] GW of power, although they do not indicate whether these wind turbine generators use the newer or older versions of software, or if the wind turbine generators are Full-Converter or DFIG products.²⁵ GE cites the U.S. Geological Survey indicating that there are over 70,000 wind turbine generators in operation in the United States. GE Rep. Sub. at 1. Thus, of the estimated total of 70,000 wind turbine generators in the United

²³ The Commission notes that there are several discrepancies between SGRE's asserted figures in its arguments and the data in supporting Exhibits 1 and 2. For purposes of estimating the potential effect of exclusion on the public interest, we find the magnitude of these discrepancies is not consequential.

²⁴ This calculation assumes that each wind turbine generator produces the same amount of power. While wind turbine generators have a range of power capacities, the Commission finds that the magnitude of any discrepancy is not consequential for its analysis here.

²⁵ Algonquin Power & Utilities Corp Sub. at 2 (stating that it operates more than 230 SGRE wind turbine generators capable of producing more than 550 MW of power); Allele Clean Energy Sub. at 1 (stating that it is [REDACTED]); Avangrid Renewables LLC Sub. at 1 (stating that it operates more than 1,383 SGRE wind turbine generators capable of producing more than 2,700 MW of power); Clearway Energy Group LLC Sub. at 2 (stating that it operates more than 474 SGRE wind turbine generators capable of producing more than 1,227 MW of power); Enel Green Power North America, Inc. Sub. at 2 (stating that it is operating 141 SGRE wind turbine generators); MidAmerican Energy Company Sub. at 1 (stating that it operates approximately 1,200 SGRE wind turbine generators capable of producing more than 2,800 MW of power); RWE Renewable Americas LLC Sub. at 2 (stating that it operates more than 350 SGRE wind turbine generators capable of producing more than 900 MW of power).

PUBLIC VERSION

States, the wind turbine generators SGRE identifies as using older software version and not excluded from the order due to use of Convertteam converters or licensing comprise approximately [REDACTED] percent of wind turbine generators in operation in the United States.

The record shows that wind turbine generators are large, complex pieces of equipment ranging in sales value from [REDACTED]. GE Init. Sub. at 30; SGRE Init. Sub. at 12. A wind turbine generator is expected to remain in operation for 20 or more years (SGRE Init. Sub. at 12) and regularly require maintenance and repair over the life of the wind turbine generator.²⁶ However, the '985 patent expires May 6, 2023 (*id.* at 35), and thus the timeframe for the expected repairs and service extends only to a fraction of the full commercial life of the infringing Full-Converter WTGs currently in operation. The parties agree that at least for some repairs, SGRE's wind turbine generators require components that are specifically designed for SGRE wind turbine generators and that cannot be sourced through GE or a third-party supplier. SGRE asserts that critical components, including generators, converter controllers, turbine controllers, and some power converters, are specifically designed for use in SGRE wind turbine generators and are not available from other suppliers. SGRE Init. Sub at 13. GE concedes this point by arguing that such repairs could be made if the wind farm happens to have the spare parts on hand and that complex repairs require repowering the wind turbine generator. GE Init. Sub. at 15-18. GE did not dispute SGRE's assertion that repowering a wind turbine generator is a twenty-month process during which the wind turbine generator is not producing power, whereas replacing a failed component can be accomplished in less than a week if the component is readily available. SGRE Init. Sub. at 19-20.

²⁶ Algonquin Power & Utilities Corp Sub. at 2; Allete Clean Energy Sub. at 1; Avangrid Renewables LLC Sub. at 1; Clearway Energy Group LLC Sub. at 2; RWE Renewable Americas LLC Sub. at 2

PUBLIC VERSION

SGRE and some wind farm operators assert that if SGRE's wind turbine generators cannot operate, the result will be a shift from renewable wind energy to less environmentally friendly energy sources.²⁷ GE argues that such lost clean power would be negligible because it is unlikely that large quantities of wind turbine generators would fail. GE Rep. Sub. at 6-7.

The record shows that there are ██████████ SGRE Full-Converter wind turbine generators operating in the United States that were found to practice claims 29, 30, 33-35, and 37 of the '985 patent, and of these ██████████ would not be covered by an LEO due to use of Convertteam converters or licensing, leaving ██████████ WTGs in operation in the United States potentially impacted by an LEO.. SGRE Int. Sub. at 17, Ex. 1 and 2. Specifically, the lack of access to the SGRE replacement parts subject to the remedy would mean that covered SGRE wind turbine generators that need service or repair during the life of the order (*i.e.*, until May 6, 2023 when the '985 patent expires) could not be repaired and would require repowering, which would put the wind turbine generators out of operation for a period of time longer than that for a repair, during which time the power generated by that wind turbine generators would have to come from alternative sources.²⁸ To the extent that this alternative source was a less environmentally friendly source and to the extent that a large number of wind turbines generators need a repair in the next sixteenth months, the lack of access to replacement parts would have a negative effect on the supply of renewable energy and thus may have some negative impact on public health and welfare. While SGRE's and the wind farm operators' submissions speak in broad, general terms about the environmental benefits of clean energy and assert that loss of power generation due to

²⁷ Algonquin Power & Utilities Corp Sub. at 2; Clearway Energy Group LLC Sub. at 2-3; RWE Renewable Americas LLC Sub. at 3.

²⁸ GE does not dispute that such delays in production would occur. GE Init. Sub. at 21 (acknowledging that switching service providers causes delays and compatibility issues).

PUBLIC VERSION

SGRE wind turbine generators that fail without access to replacement parts would result in a disruption of the availability of clean renewable power, the record, for example, does not contain evidence (e.g., informed estimates based on historical failure rates) pertaining to how many of SGRE's existing infringing wind turbine generators could be expected to fail during the remaining life of the patent and the extent to which the availability of clean renewable power would be disrupted.²⁹

Thus, while the Commission acknowledges that wind-generated power contributes importantly to the supply of clean, renewable energy, and that the supply of clean, renewable energy is essential to reducing pollution, based on the evidence on the record of this investigation, there is uncertainty as to the extent of the impact of a remedy that would prevent

²⁹ Chair Kearns joins this section except to the extent that it is inconsistent with the discussion in this footnote (and he does not join the conclusion in the final paragraph). He finds that there is a clear public health and welfare benefit from clean, renewable power generation. All else being equal, the public health and welfare benefit from each wind turbine generator that is operating. Thus, there is some negative effect on the public health and welfare of having fewer turbines operating, particularly to the extent the turbine's energy is replaced with energy from less environmentally friendly sources. Exclusion of components for service and repair of SGRE's affected wind turbines will likely result in at least some turbines being out of service for longer periods of time because of a need for repowering rather than simpler repair. There is also the risk of increased instances of turbines going out of service due to lack of components for regular maintenance. Therefore, consideration of the public health and welfare provides some support for a service and repair exemption. Given the strong support for an exemption resulting from consideration of U.S. consumers, as discussed below, he need not and does not assess whether public health and welfare alone would be a basis for an exemption for service and repair. He does not believe that there should be a higher evidentiary standard or requirement of certainty (including with respect to quantitative measures) in assessing the environmental or other public health and welfare impacts here, compared to what the Commission has required in past investigations in which it tailored or denied relief due to one or more public interest factors (*see, e.g., Certain Chemical Mechanical Planarization Slurries and Components Thereof*, Inv. No. 337-TA-1024, Comm'n Op. at 44-52 (Dec. 16, 2021); *Certain Lithium Ion Batteries, Battery Cells, Battery Modules, Battery Packs, Components Thereof, and Processes Therefor*, Inv. No. 337-TA-1159, Comm'n Op. at 67-76 (Feb. 10, 2021); *Certain Microfluidic Devices*, Inv. No. 337-TA-1068, Comm'n Op. at 38-48 (Dec. 18, 2019); *Certain Automatic Crankpin Grinders*, Inv. No. 337-TA-60, USITC Pub. 1022, Comm'n Op. at 18-21 (Dec. 1979).

repair of the [REDACTED] affected WTGs (should one or more of them require repair over the next 16 months) would have on these considerations. And, as discussed below, the Commission finds that a remedy without this exemption would have clear negative implications for U.S. consumers, such that the exemption is warranted.^{30 3132}

2. Competitive Conditions in the United States

The second public interest factor involves considering the impact of a Commission remedy on competitive conditions in the United States economy. 19 U.S.C. § 1337(d)(1), (f)(1). SGRE argues that it is one of three primary suppliers of wind turbine generators to the United States (along with GE and Vestas Wind Systems A/S), and a remedy that excludes SGRE from competing in the U.S. market will substantially decrease competition. SGRE Init. Sub. at 14. SGRE does not, however, explain or present evidence as to how an LEO would substantially decrease competition. *Id.* GE argues that this factor does not counsel against issuing a remedy because [REDACTED], and

³⁰ With regard to SGRE's argument that there is a public health and welfare interest in SGRE completing the construction of [REDACTED] wind turbine generators, as discussed below, SGRE represents that all of these development projects use later software, and as such, there does not appear to be an argument that the remedy would have any effect because SGRE can continue operating these new installations and can compete for future bids with its redesign.

³¹ The Commission clarifies that by using the word "clear," it is commenting on the strength of the evidence in this investigation and not on the evidentiary standard required to prove an effect on the public interest under Section 337(d)(1) and (f)(1).

³² Commissioner Schmidlein does not join this sentence as it appears to set forth a higher standard for evidence of adverse impact through its use of the word "clear." While she agrees that consideration of the U.S. consumers factor supports the exemption for service and repair in this investigation, she does not agree that a remedy without the exemption would have "clear" negative implications for U.S. consumers. She observes that the record fails to identify the rate at which wind turbine generators fail or breakdown. Therefore, the record is not clear as to whether or to what extent the wind turbine generators at issue will need to be repaired with infringing components in the next sixteen months. To the extent they do need to be repaired with infringing components, she finds in that circumstance the record indicates there would be an adverse impact upon U.S. consumers that justifies the service and repair exemption.

thus the exclusion of SGRE would not substantially decrease competition. GE Init. Sub. at 5; GE Rep. Sub. at 8.

The Commission finds that there are four suppliers of wind turbine generators in the United States: GE, Vestas, SGRE and Nordex. GE Init. Sub. at 5. According to a third-party source, [REDACTED]

[REDACTED]. *Id.* at 5 n.2 (citing Musher Decl. ¶ 14, Ex. 11, American Clean Power Quarterly Report (Q3, 2021) at 32). As to the wind turbine generator capacity constructed in 2021 as of the third quarter, GE, Vestas, SGRE, and Nordex have [REDACTED] market shares, respectively.

The Commission finds that SGRE appears to overestimate the potential impact of the remedial orders on competitive conditions in the United States. With regard to new development projects currently underway in the United States, inasmuch as SGRE represents that all of these development projects use later software, there does not appear to be an argument that there would be a competitive effect due to the remedy since SGRE can continue operating these new installations and can compete for future bids with its redesign.

With regard to the existing installed base of Accused Full-Converter wind turbine generators using early versions of software, SGRE states that it has contracts to supply service and repair for [REDACTED] of these wind turbine generators. GE argues that multiple entities provide service and repair of wind turbine generators to wind farm operators, including SGRE, GE, and third parties. GE Init. Sub. at 7-8; *see also* Legg Decl. ¶ 16 (noting “there are multiple other suppliers who perform service and repair of existing commissioned wind turbine generators, depending on the nature of the service, such as diagnostics, inspections, repairs, and

replacements. Examples of independent service providers include: Airways Services (O&M), United Renewables (component replacement), Global Wind Service, and Pierce Renewable Energy. Additionally, customers may elect to self-perform services. As stated above, Nextera Energy is one such customer that self-performs service for its SGRE turbines.”). The key limitation appears to be that the critical components subject to the remedy are specifically designed for use in SGRE wind turbine generators and would not be available from other suppliers. SGRE Int. Sub at 13. Thus, with these parts unavailable due to the remedy, it would be expected to have an impact upon service and repair operators and it appears that repowering would be the only option if these parts are needed, but there is no data available to assess the level of impact. Thus, it is not clear how much of an impact a remedy would have on competitive conditions in the United States, but any effect would be limited to service and repair suppliers for SGRE’s installed Full-Converter wind turbine generators base that infringe the asserted claims of the ‘985 patent.

3. The Production of Like of Directly Competitive Articles in the United States

The third public interest factor involves considering the impact of a Commission remedy on the production of like or directly competitive articles in the United States. 19 U.S.C. § 1337(d)(1). SGRE argues that it manufactures certain wind turbine nacelles and hubs in Hutchinson, Kansas, and manufactures certain wind turbine blades in Fort Madison, Iowa, and that any remedy that prevents SGRE from completing its existing projects and from servicing and repairing its existing wind turbine generators will likely result in such production stopping in both locations. SGRE Init. Sub. at 14. GE argues that SGRE failed to show that a limited exclusion order would result in a production stoppage, as these products would not be subject to

PUBLIC VERSION

a limited exclusion order and could still be used by wind farms, GE, or independent service providers. GE Rep. at 8.

The Commission finds that this factor does not weigh against issuing a remedy because the record contains no evidence that remedial relief would adversely impact the U.S. production of articles that are like or directly competitive with those that may be excluded under a remedy. Contrary to the premise of SGRE's argument, the Commission does not consider the infringing full-converter products operating with earlier versions of software to be "like or directly competitive articles" within the meaning of the statute. Rather, section 337(d)(1) directs the Commission to consider "the effect" of excluding the infringing articles upon U.S. production of like or directly competitive articles. *See* 19 U.S.C. § 1337(d)(1). In other words, the effect the Commission considers is to domestically produced articles other than to the respondent's products found to be infringing.

Although SGRE argues that its domestic blade, nacelle, and production would halt if a remedy would preclude the completion of pending new construction projects and the service and repair of existing wind turbine generators, the Commission's remedy permits much of this activity. Based on the parties' representations, all of SGRE's pending new construction projects do not infringe because they use later software or are noninfringing DFIG wind turbine generators, and thus a Commission remedy would not prohibit the completion of those projects. Moreover, the Commission remedy permits for the service and repair of several types of existing wind turbine generators, including those that are DFIG, use the later software, are licensed, or utilize Converteam components. Finally, the Commission finds that SGRE failed to provide any evidence that SGRE would in fact stop production at its Kansas and Iowa facilities or otherwise in the event of an LEO. *See* SGRE Init Sub. at 14 (citing no evidence).

Accordingly, the Commission finds that this factor does not weigh against a remedy or in favor of a service and repair exemption.

4. United States Consumers

The fourth and final public interest factor involves considering the impact of a Commission remedy on United States consumers. 19 U.S.C. § 1337(d)(1). SGRE contends that this factor weighs against issuing an LEO because of negative impacts on two types of U.S. consumers—U.S. wind farm operators that purchase and use wind turbine generators, and U.S. electricity customers that purchase electricity generated by the wind farms. SGRE Init. Sub. at 15-16. SGRE argues that U.S. wind farm operators have invested over \$10 billion in SGRE wind turbine generators over the past 15 years, and that they would be harmed if an LEO prevented them from obtaining components for service and repair of their existing wind turbine generators or to complete the pending wind turbine generator projects, which would render some of those investments useless. *Id.* SGRE further argues that an LEO would negatively impact U.S. electricity consumers by reducing the wind farm power available, which would in turn increase the price of electricity and could cause brownouts or blackouts. *Id.* at 16.

GE argues that an LEO would not negatively impact U.S. consumers because GE and third parties can service and repair the turbines, and that GE could complete any pending projects with “potentially minimal to no delay in delivery.” GE Rep. Sub. at 9. GE further argues that such harms would be minimal because all wind turbine generators are unlikely to fail at once and [REDACTED], as noted above. GE Rep. Sub. at 9-10.

Several wind farms argue that the issuance of a remedy that prevents them from obtaining SGRE components for service and repair would cause substantial costs and would cause the loss

of revenue and loss of tax credits.³³ For example, Clearway Energy LLC states that a remedy preventing the importation of the relevant SGRE components could increase Clearway Energy LLC’s maintenance costs [REDACTED]. [REDACTED]. Clearway Energy Group LLC Sub. at 2. Allete Clean Energy states that [REDACTED] agreement, and that [REDACTED]. [REDACTED]. Allete Clean Energy Supplemental Sub. at 1-2. SGRE contends that many of its critical components—including generators, most power converters, converter controllers, and turbine controller—are sourced exclusively through SGRE and designed specifically for SGRE’s wind turbine generators, and that SGRE is unaware of any alternative replacement components if SGRE is excluded from importing the components into the United States. SGRE Init. Sub. at 12-13. GE contends that it or third parties “would have no trouble sourcing components to perform repair and replacement services,” but GE does not explain how it would do so other than to hope that wind farms operators or SGRE has a domestic inventory of spare parts necessary for the repair. GE Rep. Sub. at 15; GE Init. Sub. at 16-17.

Governor Laura Kelly, Governor Kim Reynolds, and Senators Joni Ernst and Chuck Grassley argue that a remedy that prevents SGRE from importing components to service and repair its existing wind turbine generators would harm U.S. consumers of electricity by reducing the supply of electricity and raising prices for U.S. consumers.³⁴ GE argues that these concerns are “speculative at best.” GE Init. Sub. at 6.

³³ Algonquin Power & Utilities Corp Sub. at 1-2; Allete Clean Energy Sub. (Oct. 6, 2021) at 1-2; Avangrid Renewables LLC Sub. at 1-2; Clearway Energy Group LLC Sub. at 1-2; MidAmerican Energy Company Sub. at 1-2; RWE Renewable Americas LLC Sub. at 3.

³⁴ Governor Laura Kelly Sub. at 1-2; Governor Kim Reynolds Sub. at 1-2; Senators Joni Ernst and Chuck Grassley Sub. at 1.

PUBLIC VERSION

The Commission finds that this factor weighs strongly in favor of creating an exemption to the LEO for the service and repair of existing SGRE wind turbine generators, which will be sufficient to prevent the potential negative impact of the LEO on U.S. consumers.³⁵³⁶ The Commission has, based on the impact on U.S. consumers, created exemptions from remedial orders to allow innocent purchasers of infringing articles to obtain replacement parts for servicing and repairing those articles when supported by the record. *See, e.g., Certain Microfluidic Systems and Components Thereof and Products Containing the Same*, Inv. No. 337-TA-1100, Comm'n Op. at 84 (Feb. 12, 2020) (creating an exemption for the service and repair of existing microfluidic systems to allow existing research projects to continue); *Certain Road Construction Machines and Components Thereof*, Inv. No. 337-TA-1088, Comm'n Op. at 47-50 (Jun. 27, 2019) (creating an exemption for service and repair for road construction machines based on the expensive investment and need for replacement parts); *Certain Automated Teller Machines, ATM Modules, Components Thereof, and Products Containing the Same*, Inv. No. 337-TA-972, Comm'n Op. at 26-27 (May 19, 2017) (creating an exemption for replacements parts for the service and repair of automated teller machines based in part because of the size of the investment and the third party submissions showing the harm that would result to consumers

³⁵ The Commission clarifies that by using the word “strongly,” it is commenting on the strength of the evidence in this investigation and not on the evidentiary standard required to prove an effect on the public interest under Section 337(d)(1) and (f)(1).

³⁶ Commissioner Schmidlein does not join this sentence as it appears to set forth a higher standard for evidence of adverse impact through its use of the word “strongly.” While she agrees that consideration of the U.S. consumers factor supports the exemption for service and repair in this investigation, she does not agree that consideration of that factor “strongly” weighs in favor of creating an exemption. She observes that the record fails to identify the rate at which wind turbine generators fail or breakdown. Therefore, the record is not clear as to whether or to what extent the wind turbine generators at issue will need to be repaired with infringing components in the next sixteen months. To the extent they do need to be repaired with infringing components, she finds in that circumstance the record indicates there would be an adverse impact upon U.S. consumers that justifies the service and repair exemption.

PUBLIC VERSION

if replacement parts were not available). The Commission has also based such exemptions on the fact that the infringer is the only source of replacement parts. *See Certain Road Milling Machines and Components Thereof*, Inv. No. 337-TA-1067, Comm'n Op. at 32-33 (Jul. 18, 2019) (creating an exemption for service and repair of road milling machines because of a need to service and repair the machines and because the respondents was the sole source of replacement parts).

Here, the Commission finds that SGRE and the wind farms have shown that replacement parts, which are proprietary to SGRE, can only be sourced through SGRE. SGRE Init. Sub. at 13, 15, and Ex. 7 (Boesen Decl. at ¶19); Algonquin Power & Utilities Corp Sub. at 2; MidAmerican Energy Company Sub. at 1-2. Although GE contends that it would have “little difficulty” in procuring replacement parts, GE itself admits that it could only perform “basic service and replacement or repair of non-accused or non-infringing components,” and would have to conduct a repower service for more complicated issues. GE Init. Sub. at 15. As discussed above, a repower service is an extensive replacement of many components that costs in excess of ██████████ per wind turbine generator. In contrast, as also discussed above, GE did not dispute that SGRE’s key replacement components cost approximately ██████████. SGRE Init. Sub. at 20. Accordingly, the parties’ submissions show that each instance in which a remedy caused a wind farm to have to repower an SGRE wind turbine instead of merely replacing a failed component would cost the wind farm approximately ██████████ in repower costs. Although SGRE did not provide any evidence as to how many such repowers would be necessary during the life of the LEO, the Commission finds that even a relatively few instances of such avoidable repowers would significantly negatively impact U.S. consumers of SGRE’s wind turbine generators.

PUBLIC VERSION

Moreover, wind farms also showed that they would suffer numerous other harms if they are unable to service and repair their existing SGRE wind turbine generators, including wasted investment in SGRE service agreements that can no longer be performed, lost revenue from lost power generation, and lost tax credits that amount to millions of dollars.³⁷ GE does not dispute that switching service and repair from SGRE to GE would cause delays and incompatibility issues. GE Init. Sub. at 21 (acknowledging that switching service providers causes delays and compatibility issues). Accordingly, the potential impact of an LEO on U.S. consumers is even stronger than the mere multimillion cost of an avoidable repower.

The Commission acknowledges that there is no record evidence as to how many avoidable repowers would occur during the life of the LEO. But given the high cost of even a single avoidable repower, as well as the potential that some of the approximately [REDACTED] wind turbine generators implicated by the order could fail, the Commission finds that the potential costs and harms to wind farms warrants granting an exemption to permit the importation of articles for the purposes of servicing and repairing SGRE's existing wind turbine generators.

Several governors and U.S. Senators raised concerns regarding a potential increase in the price of electricity based on an LEO's removal of SGRE from the market.³⁸ Those submissions, however, assumed that the Commission would issue a remedy that would remove SGRE from the wind turbine generator market entirely. As discussed above, the Commission has determined to issue an LEO and CDO that allow SGRE to construct and maintain many of its existing and

³⁷ Algonquin Power & Utilities Corp Sub. at 1-2; Allele Clean Energy Sub. at 1-2; Allele Clean Energy Supplemental Sub. at 1-2; Avangrid Renewables LLC Sub. at 1-2; Clearway Energy Group LLC Sub. at 1-2; MidAmerican Energy Company Sub. at 1-2; RWE Renewable Americas LLC Sub. at 3; SGRE Init. Sub. at 15-16.

³⁸ Governor Laura Kelly Sub. at 1-2; Governor Kim Reynolds Sub. at 1-2; Senators Joni Ernst and Chuck Grassley Sub. at 1.

pending projects, including projects related to DFIG wind turbines, Full-Converter Products with later software, licensed wind turbines, and wind turbines with Converteam components.

Moreover, the Commission created an exemption to allow SGRE to service and repair its existing wind turbine generators. Accordingly, the Commission finds that its LEO and CDO are unlikely to significantly impact the price of electricity.

5. Summary

The Commission, having considered the public interest factors, has determined to issue an LEO and a CDO with an exemption to allow for the service and repair of existing SGRE wind turbine generators. With the inclusion of the exemption for service and repair, the Commission finds that it is appropriate to issue an LEO and CDOs against SGRE with respect to claims 29, 30, 33-35, and 37 of the '985 patent.

C. Bonding

If the Commission enters an exclusion order, a respondent may continue to import and sell its products during the 60-day period of Presidential review under a bond in an amount determined by the Commission to be “sufficient to protect the complainant from any injury.” 19 U.S.C. § 1337(j)(3); *see also* 19 C.F.R. § 210.50(a)(3). When reliable price information is available in the record, the Commission has often set the bond in an amount that would eliminate the price differential between the domestic product and the imported, infringing product. *See Certain Microsphere Adhesives, Processes for Making Same, & Prods. Containing Same, Including Self-stick Repositionable Notes*, Inv. No. 337-TA-366, USITC Pub. No. 2949, Comm’n Op. at 24 (Jan. 16, 1996). The Commission also has used a reasonable royalty rate to set the bond amount where a reasonable royalty rate could be ascertained from the evidence in the record. *See, e.g., Certain Audio Digital-to-Analog Converters & Prods. Containing Same,*

PUBLIC VERSION

Inv. No. 337-TA-499, Comm'n Op. at 25 (Mar. 3, 2005). Where the record establishes that the calculation of a price differential is impractical or there is insufficient evidence in the record to determine a reasonable royalty, the Commission has imposed a one hundred percent bond. *See, e.g., Certain Liquid Crystal Display Modules, Prods. Containing Same, & Methods Using the Same*, Inv. No. 337-TA-634, Comm'n Op. at 6-7 (Nov. 24, 2009). The complainant, however, bears the burden of establishing the need for a bond. *Certain Rubber Antidegradants, Components Thereof & Prods. Containing Same*, Inv. No. 337-TA-533, USITC Pub. No. 3975, Comm'n Op. at 40 (July 21, 2006).

The ALJ recommended that the bond rate during the period of Presidential review should be set at zero percent of the entered value of the products. RD at 153. The ALJ found that GE failed to argue that a bond was appropriate in its post-hearing briefing to the ALJ, and therefore abandoned any contention that a non-zero bond is warranted in this investigation. *Id.*

GE acknowledges that it failed to address bonding in its initial post-hearing brief, but argues that a bond of one hundred percent of entered value is appropriate because a price differential is impractical due to GE's and SGRE's products selling at various prices and because a reasonable royalty cannot be calculated because GE's license agreements are litigation settlements or cross-licenses. GE Init. Sub. at 32-34. SGRE argues that the ALJ correctly found that GE waived bonding, SGRE Init. Sub. at 40, and that, in any event, GE failed to show that a bond was necessary to protect against injury, SGRE Rep. Sub. at 11.

The Commission has determined to set the bond rate at zero percent of entered value of subject articles (*i.e.*, no bond). As the ALJ found, GE abandoned its request for a bond by failing to argue for a bond in its initial post-hearing brief. *See Order No. 2* (Sept. 8, 2020) at Rule 14.1 (stating that, if a party fails to address in its initial post-hearing brief an issue upon which it has

PUBLIC VERSION

the burden of proof, that issue will be deemed withdrawn or abandoned); GE Init. Sub. at 32 n. 12 (admitting that GE did not address bonding in its initial post-hearing brief). Moreover, despite having the burden of proof to show a bond in an amount determined by the Commission to be sufficient to protect the complainant from any injury,”³⁹ GE failed to present any argument or evidence why it would be harmed by importation during the period of Presidential review.

V. CONCLUSION

For the reasons set forth herein, the Commission determines that GE has established a violation of section 337 by SGRE with respect to claims 29, 30, 33-35, and 37 of the '985 patent. Accordingly, the investigation is terminated with a finding of violation of section 337. The Commission determines that the appropriate remedy is a limited exclusion order and cease and desist orders, the public interest does not preclude that remedy, and the bond during the Presidential review period is set at zero percent of entered value.

By order of the Commission.



Lisa R. Barton
Secretary to the Commission

Issued: January 26, 2022

³⁹ 19 U.S.C. § 1337(j)(3); 19 C.F.R. § 210.50(a)(3).