UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of	
CERTAIN RECHARGEABLE BATTERIES AND COMPONENTS THEREOF	**Inv. No. 337-TA-1421**

ORDER NO. 14: CONSTRUING CLAIM TERMS

(February 21, 2025)

I. BACKGROUND

The Commission instituted this investigation to determine whether certain rechargeable batteries and components thereof infringe various claims of U.S. Patent Nos. 9,412,994 and 9,954,207. 89 Fed. Reg. 84194 (Oct. 21, 2024). The complainants are LithiumHub, LLC, Lithiumhub Technologies, LLC, and Martin Koebler. *Id*. The respondents are Bass Pro Outdoor World LLC, Cabela's LLC, Navico Group Americas LLC, Relion Battery (Shenzhen) Technology Co., Renogy New Energy Co., Ltd., RNG International Inc., Clean Republic SODO LLC, Shenzhen Yichen S-Power Tech Co., Ltd., Shenzhen Fbtech Electronics Ltd., Shenzhen LiTime Technology Co., Ltd., Dragonfly Energy Corp., Dragonfly Energy Holdings Corp., and MillerTech Energy Solutions LLC. *Id*.[1] The Commission Investigative Staff is a party to this investigation. *Id*.

[1] Respondent Shenzhen Yichen S-Power Tech Co. Ltd. was found in default. Order No. 11 (EDIS Doc. ID 840775), *unreviewed by* Comm'n Notice (EDIS Doc. ID 842433). The procedural schedule was stayed as to the Dragonfly Respondents pending finalization of a settlement agreement and a motion to terminate. 2/6/2025 Tr. at 7:16–8:20 and 98:12–14 (EDIS Doc. ID 842842).

The complaint asserts infringement of 38 claims across two patents. *See* Complaint (EDIS Doc. ID 832145).

The parties filed two joint charts identifying agreed and disputed claim terms, Joint Chart (EDIS Doc. ID 840647) and Joint Supplemental Chart (EDIS Doc. ID 843087), and filed claim construction briefs. Compl. Br. (EDIS Doc. ID 840885); Resp. Br. (EDIS Doc. ID 840888); Staff Br. (EDIS Doc. ID 841449); Compl. Reply (EDIS Doc. ID 842027); and Resp. Reply (EDIS Doc. ID 842024). The parties submitted expert declarations with their claim construction briefs. Compl. Br., Ex. 6 (Baker Decl.); Compl. Reply, Ex. 7 (Baker Reply Dec.); and Resp. Br., Ex. 2 (Toliyat Decl.). A claim construction hearing was held. 2/6/2025 Tr. (EDIS Doc. ID 842842). At the hearing, all parties used demonstrative exhibits. Compl. Demonstratives (EDIS Doc. ID 842705); Resp. Demonstratives (EDIS Doc. ID 842697); Staff Demonstratives (EDIS Doc. ID 842702). Neither expert testified at the hearing, and neither was deposed before the hearing. 2/6/2025 Tr. at 46:12–16.

This order addresses the claim construction issues raised by the parties.

II. RELEVANT LAW

It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). "[T]here is no magic formula or catechism for conducting claim construction." *Id*. at 1324. Instead, weight may be attached to appropriate sources "in light of the statutes and policies that inform patent law." *Id*.

The terms of a claim are generally given their ordinary and customary meaning, which is the meaning that the term would have to one of skill in the art at the time of the invention. *Id*. at 1312–13. The ordinary meaning of a claim term is its meaning to one of skill in the art after reading the entire patent. *Id*. at 1321. The patent specification "is always highly relevant to the claim

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construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

In addition to the specification, a court "should also consider the patent's prosecution history, if it is in evidence." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996). The prosecution history, which is intrinsic evidence, is "the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent." *Phillips*, 415 F.3d at 1317. "[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id*. "[B]ecause the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." *Id*.

In some situations, a "court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period." *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331 (2015). Extrinsic evidence is "all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980.

While expert testimony can be useful "to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art," such testimony is "generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." *Phillips*, 415 F.3d at 1318. "The effect of that bias can be

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exacerbated if the expert is not one of skill in the relevant art or if the expert's opinion is offered in a form that is not subject to cross-examination." *Id*. Further, while extrinsic evidence may be useful, it is less reliable than intrinsic evidence, and its consideration "is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." *Id*. at 1319. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999), *citing Vitronics*, 90 F.3d at 1583.

III. LEVEL OF ORDINARY SKILL IN THE ART

The parties essentially agree on the level of ordinary skill in the art. Baker Decl. ¶ 19; Toliyat Decl. ¶ 21; Baker Reply Decl. ¶ 7; Resp. Br. at 9; Staff Br. at 5; and 2/6/2025 Tr. at 17:20–23 (Respondents), 35:1–5 (Complainants), and 64:20–25 (Staff). The differences in phrasing between Dr. Baker, for Complainants, and Respondents and Staff are immaterial.

I adopt Respondents' proposal that one of skill:

> would have had a Bachelor of Science degree in electrical engineering or an equivalent degree, and two or more years of engineering experience in the design of rechargeable Lithium-ion batteries as well as at least some experience in the design of battery management systems for such batteries. An advanced degree in electrical engineering or an equivalent field of study, such as a Masters or doctorate, may be substituted for the required experience. . . [F]urther education could also suffice in lieu of experience in the field or further experience in the field could substitute for formal education

Resp. Br. at 9; *see also* Staff Br. at 5.

IV. AGREED CONSTRUCTIONS

The parties agree on the following constructions:

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Claim Term	Asserted Patent Claim(s)	Agreed Construction
the switches of a pair of solid state switches being configured such that either the drains of the switches are connected or the sources of the switches are connected	'994 claims 1 and 14 and '207 claims 1 and 12	Either (1) the drains of a pair of solid state switches are connected, or (2) the sources of a pair of solid state switches are connected, but not both.
A battery pack for driving an electrical device in a 1 volt to 120 volt operating system, said battery pack comprising:	'994 patent claim 14	The parties agree there is an error in the preamble of the '994 patent, claim 14 which should have recited: A battery pack for driving an electrical device in a 12 volt to 120 volt operating system, said battery pack comprising:[2] The parties agree that the underlined text of the preamble is limiting: A battery pack for driving an electrical device in a 1 [sic] volt to 120 volt operating system, said battery pack comprising:
A battery pack for driving an electrical device in a 12 volt to 120 volt operating system, said battery pack having a positive terminal and a negative terminal, comprising:	'994 patent claim 1	The parties agree that the underlined text of the preamble is limiting: A battery pack for driving an electrical device in a 12 volt to 120 volt operating system, said battery pack having a positive terminal and a negative terminal, comprising:
A battery pack having positive and negative terminals for powering an electric motor for starting an internal combustion engine in which the electric motor is in a 6 volt to 48 volt operating system, said battery pack comprising:	'207 claim 1	The parties agree that the underlined text of the preamble is limiting: A battery pack having positive and negative terminals for powering an electric motor for starting an internal combustion engine in which the electric motor is in a 6 volt to 48 volt operating system, said battery pack comprising:

[2] As discussed below, the parties dispute whether this error can be corrected.

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Claim Term	Asserted Patent Claim(s)	Agreed Construction
A deep cycle battery having positive and negative terminals in a 6 volt to 800 volt operating system comprising:	'207 claim 12	The parties agree that the underlined text of the preamble is limiting: A deep cycle battery having positive and negative terminals in a 6 volt to 800 volt operating system comprising:

Joint Supplemental Chart at 1–3.

For purposes of this investigation, the agreed constructions are adopted.

V. CONSTRUCTION OF DISPUTED CLAIM TERMS

The parties' disputed constructions are addressed below.

A. The Circuit Board Terms

The parties dispute the interpretation of two terms in claims 1 and 14 of the '994 patent, which recite: "a circuit board within said housing configured to balance each individual cell within said housing" (claim 1) and "a circuit board within said housing . . . having a cutoff function incorporated therein" / "a circuit board within said housing having a cutoff function incorporated therein" (claims 1 and 14). *See* Joint Supplemental Chart at 4–5.

Respondents argue that both terms are subject to § 112, ¶ 6,[3] and that the '994 patent fails to disclose sufficient structure, rendering the claims invalid as indefinite. Resp. Br. at 19–30. Complainants argue that neither term is subject to § 112, ¶ 6, Compl. Br. at 9–12, and in the alternative that if § 112, ¶ 6 applies, the '994 patent discloses sufficient structure. *Id.* at 12–20. The

[3] The Leahy-Smith America Invents Act (AIA) redesignated § 112, ¶ 6 as § 112(f). Leahy-Smith America Invents Act, Pub. L. No. 112-29, sec. 4(c), 125 Stat. 284, 296 (2011). I refer to the pre-AIA version because the applications resulting in the '994 patent were filed before September 16, 2012. *See id.* sec. 4(e), 125 Stat. at 297; *see also Media Rights Techs., Inc. v. Cap. One Fin. Corp.*, 800 F.3d 1366, 1371, n.1 (Fed. Cir. 2015) and 2/6/2025 Tr. at 34:12–20.

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Staff argues that both terms are subject to § 112, ¶ 6, and that the '994 patent discloses sufficient structure for each term. Staff Br. at 21–37.

All parties appear to contend that extrinsic evidence, including expert testimony, is required to resolve the dispute about whether these terms are subject to 35 U.S.C. § 112, ¶ 6 and whether they are invalid as indefinite. *See, e.g.*, Baker Decl. ¶¶ 57–88; Toliyat Decl. ¶¶ 43–78; Baker Reply Decl. ¶¶ 8–41; 2/6/2025 Tr. at 19:16–22:1 (Respondents, addressing expert declarations), 38:17–40:7 (Complainants addressing Toliyat declaration and prior art), and 57:1–13 (Staff, discussing conflicting expert declarations). In addition, the parties discussed a datasheet for a Texas Instruments part and disputed its relevance to this issue. *Id*. at 22:2–10, 40:8-41:9, 66:21–67:20, and 68:19–69:2. The Staff pointed out that the TI datasheet was provided the night before the claim construction hearing, *id*. at 66:17–18, and that the experts did not address it in their declarations, *id*. at 67:2–3.

Without taking a position on whether extrinsic evidence is necessary (or even helpful) to this dispute, the present record is incomplete because neither expert testified at the claim construction hearing, neither expert was cross-examined, and the record is incomplete regarding the extrinsic evidence, including the TI datasheet. *See Phillips*, 415 F.3d at 1318 (the effect of bias may be exacerbated if the expert's opinion is offered in a form that is not subject to cross-examination). As a result, a finding on whether these terms are subject to § 112, ¶ 6 and the proper construction of these terms will be deferred. *Certain Video Processing Devices & Prods. Containing the Same*, Inv. No. 337-TA-1341, Order No. 27 at 2–3 (Sept. 22, 2023) (EDIS Doc. ID 804718); *see also Int'l Dev. LLC v. Richmond*, No. 09-2495, 2010 WL 4703779 at *7 (D.N.J. Nov. 12, 2010) (deferring the parties' indefiniteness arguments until summary judgment because

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of "(1) the high burden of proof required to show indefiniteness and (2) its potentially dispositive, patent-invalidating nature").

B. Preamble of Claim 14 of the '994 Patent

The preamble of claim 14 of the '994 patent recites "[a] battery pack for driving an electrical device in a 1 volt to 120 volt operating system, said battery pack comprising[.]" The parties agree that the preamble of claim 14 of the '994 patent has a typographical error, such that "1 volt" should read "12 volt." Joint Supplemental Chart at 2, n.2 and n.3. The parties dispute whether the Commission can correct the error through claim construction.

Complainants argue that the error can be corrected and contend that "[n]o reasonable debate based on consideration of the claim language and the specification is possible here and indeed Respondents provide no analysis of, or citations to, either the claims or the specification." Compl. Reply at 9–10. Respondents argue that this error cannot be corrected because it "is not apparent from the face of the patent but only identified through a detailed review of the prosecution history." Resp. Br. at 17. The Staff argues that the Commission can correct the error as a matter of claim construction. Staff Br. at 19–20. According to the Staff, based on the claim language itself and the specification, there is no dispute that the claims contain a typographical error. *Id*. at 20–21, *citing* '994 patent at 3:33–39. The Staff argues that the prosecution history also shows that there is a typographical error, as claim 14 was added and specifically recited "a 12 volt to 120 volt operating system." *Id*. at 21, *citing* Compl. Br. Ex. 3 at 7 (showing claim 27, which issued as claim 14).

The Commission has authority to correct an error if: "(1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims." *Certain Bio-Layer Interferometers and Components Thereof*, Inv. No. 337-TA-1344, Comm'n Op. at 12 (Aug. 24,

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2023) (EDIS Doc. ID 803150), *quoting Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1354 (Fed. Cir. 2003); *see also id*. at 25–28 (explaining that the Commission has the authority to correct such errors as a matter of claim construction). Both prongs of the *Novo* standard are satisfied here.

The correction is not subject to reasonable debate based on consideration of the claim language and the specification. There is no dispute that "1 volt" is an error and should read "12 volt." Respondents acknowledge that the specification identifies a range of 12 to 120 volts and never identifies a range of 1 to 120 volts. 2/6/2025 Tr. at 91:14–19. The '994 patent also explains that lithium cells have nominal cell voltages between 3 and 4 volts, and that four lithium cells in series have a nominal voltage around 12 volts. *Id*. at 3:33–39, 6:6–24; and 7:49–8:9; Compl. Reply at 10; and Staff Br. at 20–21. Because claim 14 recites "at least one lithium-based rechargeable cell," a range with a low end of 1 volt is unmistakably an error, apparent from the claim language and specification. Respondents focus on extrinsic evidence: the '207 patent, with a different disclosure. Resp. Reply at 6-7 (citing claims of the '207 patent); *see also* 2/9/2025 Tr. at 93:24–94:7 (Staff arguing that the '207 patent is irrelevant because it has a different disclosure).

Respondents argue that "even Complainants did not recognize or perceive the error—in bringing this action Complainants' repeatedly asserted the erroneous '1 volt to 120 volt' range of '994 claim 14 and its dependents in its alleged infringement and domestic industry practiced product charts to the Complaint." Resp. Br. at 17. Complainants respond that this "argument carries no weight because it is not based on a consideration of the claims and specification" and that its approach was prudent because the error had not yet been corrected. Compl. Reply at 10, n.4. While Complainants' repetition of the error in its claim charts is unfortunate, it is not dispositive. The claim language and specification make clear that a lower limit of 1 volt is an error.

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The prosecution history does not suggest a different interpretation of claim 14. Application claim 27, which issued as patent claim 14, was added by amendment in April 2016 and recited: "A battery pack for driving an electrical device in a 12 to 120 volt operating system[.]" Compl. App'x A at pdf p.161 (EDIS Doc. ID 832133, Att. 239072). The Examiner allowed application claim 27, without amendment. *Id*. at pp.220–24; *see also id*. at p.229 (identifying original claim 27 as final claim 14). As Respondents acknowledge, the prosecution history is unequivocal, 2/9/2025 Tr. at 90:16–18 ("everybody agrees the claim that was allowed was 12 to 120 when you look at the prosecution history"), and in fact confirms that the lower end of the claimed voltage range is not 1 volt and is instead 12 volt. This was a typographical error introduced at issuance of the '994 patent and "1 volt" should read "12 volt."

Respondents' reliance on *H-W Technology, L.C. v. Overstock.com, Inc.*¸758 F.3d 1329 (Fed. Cir. 2014) is misplaced. *See* Resp. Br. at 17; Resp. Reply at 6; 2/9/2025 Tr. at 90:5–8. There, although the PTO inadvertently omitted a limitation from the claim when the patent issued, the Federal Circuit explained that because "the error is not evident from the face of the patent," the district court did not have authority to correct it. 758 F.3d at 1333–34. The erroneous claims were unenforceable because the error could not be corrected under the *Novo* standard and instead a certificate of correction was required. *Id*. at 1335–36. By contrast, here, the error in claim 14 is apparent on the face of the patent and meets the *Novo* standard. The prosecution history does not suggest a different interpretation of claim 14. Respondents are incorrect that a certificate of correction is required to correct the error in claim 14. *See WAG Acquisition, LLC v. Multi-Media, LLC*, No. 14-2340 (ES)(JAD), 2015 WL 5310203, at *3–4 (D.N.J. Sept. 10, 2015) (discussing *H-W Technology* and explaining that "Defendants have cited no case suggesting that *any* claim with an uncorrected error is unenforceable as a matter of law. In fact, the cases that Defendants rely on

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are inapposite, and they reveal that courts have not held patent claims unenforceable simply because they contain uncorrected errors."); *see also Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1331 (Fed. Cir. 2005) (holding that the court could correct an error in the reference to an antecedent independent claim under *Novo* and explaining "[a]bsent evidence of culpability or intent to deceive by delaying formal correction, a patent should not be invalidated based on an obvious administrative error.").

I therefore construe "[a] battery pack for driving an electrical device in a 1 volt to 120 volt operating system, said battery pack comprising[]" to mean "[a] battery pack for driving an electrical device in a 12 volt to 120 volt operating system, said battery pack comprising[.]"

SO ORDERED.

Doris Johnson Hines
Administrative Law Judge

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