UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLTAGE, LLC
Petitioner,

v.

SHOALS TECHNOLOGIES GROUP, LLC,
Patent Owner.

Case IPR2024-00876
U.S. Patent No. 10,992,254

PATENT OWNER PRELIMINARY RESPONSE

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EXHIBIT LIST

Exhibit No.	Description
2001	Declaration of Joshua Weiner in Support of Patent Owner's Preliminary Response
2002	Curriculum Vitae of Joshua Weiner
2003	Combined Transcripts of Public Versions of Evidentiary Hearing in ITC Investigation No. 337-TA-1365, *Certain Photovoltaic Connectors and Components Thereof*, March 18-22, 2024 [EDIS Doc. IDs 816318, 816393, 816472, 816792, 816795]
2004	U.S. Patent No. 8,604,342 to Solon.
2005	National Electrical Code (2014) excerpts: -- Article 690 – Solar Photovoltaic (PV) Systems -- Article 240 – Overcurrent Protection -- Informative Annex A – Product Safety Standards
2006	U.S. Patent No. 8,937,249 to Solon.
2007	U.S. Patent No. 8,408,929 to Solon.
2008	U.S. Patent No. 8,962,998 to Solon.
2009	U.S. Patent Publication No. 2014/0071563 to Solon.
2010	U.S. Patent No. 9,847,196 to Solon.
2011	U.S. Patent No. 9,589,752 to Solon.
2012	U.S. Patent No. 9,847,627 to Solon.
2013	*About NABCEP*, North American Board of Certified Energy Practitioners, https://www.nabcep.org/about-us/.
2014	*Electricity Explained: Electricity in the United States*, U.S. Energy Information Administration, https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php.

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2015	*Solar Explained: Photovoltaics and Electricity*, U.S. Energy Information Administration, https://www.eia.gov/energyexplained/solar/photovoltaics-and-electricity.php#:~:text=Photovoltaic%20cells%20convert%20sunlight%20into,or%20particles%20of%20solar%20energy.
2016	Complainant Shoals Technology Group, LLC's Initial Post-Hearing Brief [Public Version; EDIS Doc. ID 820873]
2017	Complainant Shoals Technology Group, LLC's Reply Post-Hearing Brief [Public Version; EDIS Doc. ID 821478]
2018	Respondents' Post-Hearing Brief [Public Version; EDIS Doc ID 820862]
2019	Respondents' Reply Post-Hearing Brief [Public Version; EDIS Doc ID 820864]
2020	Shoals BLA Installation [ITC Hrg. Ex. CX-0167]
2021	Shoals BLA Slide Presentation [ITC Hrg. Ex. JX-0099]
2022	Shoals BLA Mold Drop [ITC Hrg. Ex. JX-0121]
2023	Shoals Q1 2023 Investor Presentation [ITC Hrg. Ex. JX-0113]
2024	Shoals BLA Slide Presentation [ITC Hrg. Ex. CX-0144]

Patent owner Shoals Technology Group, LLC ("Shoals") respectfully submits the following preliminary response pursuant to 37 C.F.R. § 42.207(a).

I. INTRODUCTION AND SUMMARY OF ARGUMENTS

The information presented in the petition fails to meet the statutory threshold; it does not show that there is a reasonable likelihood that Voltage[1] would prevail, if trial were instituted, with respect to at least one of the claims of the '254 patent.[2] *See* 35 U.S.C. § 314(a). The Board should deny the petition and decline to institute trial.

First, there are global failures that render the petition incapable of meeting the required standard, including Voltage's failure to confront known evidence of objective indicia of nonobviousness developed in an ITC investigation involving both Shoals and Voltage. Independently fatal is the failure of Voltage's expert witness, Dr. Kenny, to possess the solar industry experience required to competently speak to the views of a person of ordinary skill in the art (POSA) of "lead assembl[ies that] combine[] power from ***a plurality of solar arrays*** and transmit[] that power to an inverter in ***a solar energy installation***," as claimed in

[1] "Voltage" refers to the petitioner Voltage, LLC and its real party-in-interest, parent company Ningbo Voltage Smart Production Co.

[2] U.S. Patent No. 10,992,254.

the ’254 patent. EX1001 at, e.g., 7:6–8.[3] A resulting failure is that neither Dr. Kenny nor Voltage understands the claims or how they relate to the asserted references, which failure further renders the petition ineffectual.

As for the four individually stated grounds for unpatentability, all share a major common flaw—conclusory assertions masquerading as motivation to combine with no evidentiary support. The Amphenol-based grounds (Grounds 1–3) are further hobbled by the petition’s failure to show that Amphenol qualifies as a printed publication under 35 U.S.C. § 102(a)(1). Moreover, the solar array illustrations in Amphenol do not disclose what Voltage’s unqualified expert says they do. Dr. Kenny’s lack of solar experience also affects the Yamawaki-based ground (Ground 4), as he mistakenly reads Shao as analogous to the ’254 patent and therefore available as prior art. Ground 4 fails because Shao is not, in fact, analogous to the ’254 patent.

II. THE ITC INVESTIGATION

Shoals filed a complaint against Voltage (and others) with the U.S. International Trade Commission (ITC) on May 4, 2023, styled *Certain Photovoltaic Connectors and Components Thereof*, stating claims for infringement of the ’254 patent and one other patent directed to a different technology. *See* 88

[3] All instances of emphasis are supplied by Shoals unless otherwise indicated.

Fed. Reg. 37905 (notice of institution of Investigation No. 337-TA-1365). With leave granted by Administrative Law Judge Bhattacharyya, Shoals filed an amended complaint on July 19, 2023, to add claims for infringement of U.S. Patent No. 11,689,153 ("'153 patent"), which is a continuation of the '254 patent. *See* 88 Fed. Reg. 56883 (Aug. 21, 2023) (notice of Commission's decision not to review Judge Bhattacharyya's determination to allow amendment).

A five-day evidentiary hearing took place from March 18–22, 2024. Shoals withdrew the '254 patent shortly prior, so the hearing was focused on the technology of the '153 patent. Because the '254 and '153 patents share a common written description and have claims that cover the same Shoals product, i.e., the BLA described below, much of the sworn witness testimony from the hearing remains highly relevant to issue of the patentability of the claims of the '254 patent. The public version of the full hearing transcript is filed herewith as EX2003 and Shoals cites to it where appropriate for evidence regarding matters not dependent upon claim language, such as the technology generally, the level of skill in the art, and objective indicia of nonobviousness.

III. THE '254 PATENT AND SHOALS' BLA PRODUCT

A. The '254 patent radically advanced utility-scale solar field architecture.

In a solar power installation, sunlight hitting solar modules generates direct current (DC) electricity, which is carried to an inverter that converts it to

alternating current (AC) so it can be fed into the power grid, which then carries it to consumers in homes and businesses. EX1001, 1:20–26; EX2001, ¶¶ 34–35. "EBOS" is an acronym for "Electrical Balance Of Systems," which encompasses the components and equipment that carries the DC electric current from the modules to the inverter. EX2001, ¶ 8; EX2023, 7 [ITC Hrg. Ex. JX-0113]; EX2003, Tr. (Macias[4]) at 104:20–105:1; Tr. (Brooks[5]) at 384:13–19; Tr. (Weiner[6]) at 1262:2–13. EBOS components can include, for example, cables and wires of various sizes and lengths, joints, connectors, fuses, junction boxes, combiner boxes, switches, and ground fault detectors. EX2001, ¶ 8; EX2023, 7 [ITC Hrg. Ex. JX-0113].

[4] Ben Macias, Shoals' Chief Revenue Officer, testified as a Shoals fact witness at the evidentiary hearing. EX2003, 103:4–19.

[5] Bill Brooks testified for Shoals as technical expert, EX2003, 381:14–25, admitted by Judge Bhattacharyya to testify "as an expert on photovoltaic solar energy systems, EBOS, and the electrical wiring for such systems," *id.*, 389:5–7.

[6] Josh Weiner testified as Shoals' validity expert, EX2003, 1256:16–1257:7, "admitted as an expert in photovoltaic solar energy systems, EBOS, and the electrical wiring for solar systems," *id.*, 1263:1–3.

When ’254 patent inventor and Shoals founder Dean Solon began working in solar, the state of the art for EBOS in utility-scale solar fields was referred to as a “homerun” architecture, as illustrated here:

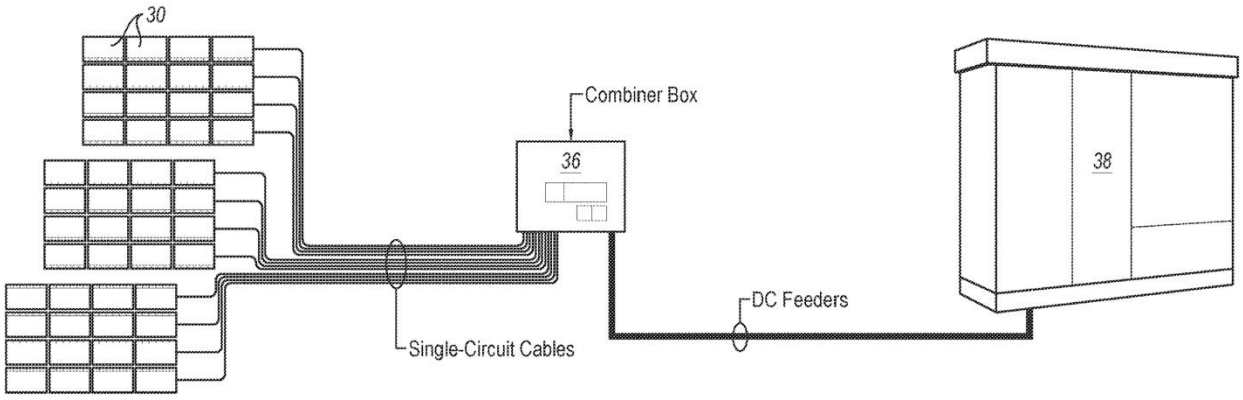
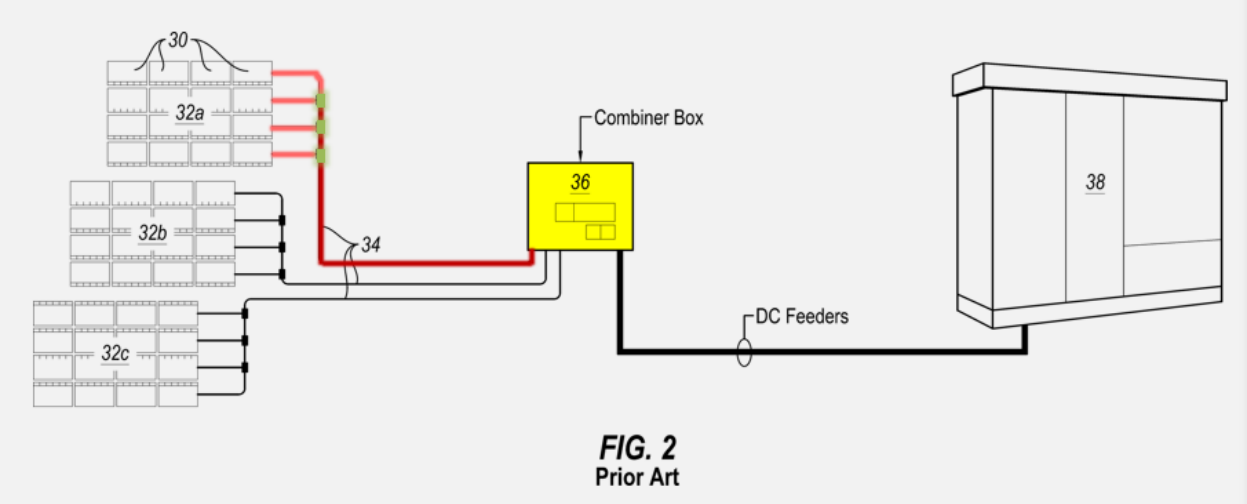


FIG. 1
Prior Art

EX1020, Fig. 1;[7] EX1001, Fig. 1. Single-circuit cables ran “home” from panels made up of solar modules (ref. no. 30) to a combiner box (36), which combined the home runs and fed the consolidated power through a DC feeder to the inverter (38).

[7] As noted previously, the ’254 and ’153 are related by continuation. This means the ’153 patent contains no new matter not found in the ’254 patent. 37 C.F.R. § 1.53(b). The figures are substantively identical, but the ’153 patent figures are better quality, so Shoals uses them in this section III to more clearly illustrate Mr. Solon’s innovation.

EX2003, Tr. (Macias) at 112:17–113:13, Tr. (Tolnar[8]) at 226:1–4. Mr. Solon's first innovation on this architecture was to consolidate single-circuit cables into wire harnesses (34), as shown in Figure 2:



EX1020, Fig. 2 (annotated); EX1001, Fig. 2. The wire harness, shown above in red, consolidated single-circuit branch cables into a smaller number of trunk cables, each of which then carried power from an entire array (32a, 32b, 32c) to the combiner box. This invention was essentially about making the panel-to-combiner box wiring more efficient. As the Background section of the '254 patent explains, this round of invention is covered by Solon's U.S. Patent No. 8,604,342. EX1001, 1:20–29; EX2004.

[8] Shoals' President, Jeffrey Tolnar, testified at the evidentiary hearing as a Shoals fact witness. EX2003, 219:2–17.

With the ’254 patent, Mr. Solon went in a different direction. Instead of starting from the solar panel arrays and continuing to work toward the combiner box, he had the idea to start from the inverter and extend the DC feeder cable into the field, bypassing the combiner box entirely and connecting directly to the wire harness trunks—as shown in Figure 3, shown below in orange:

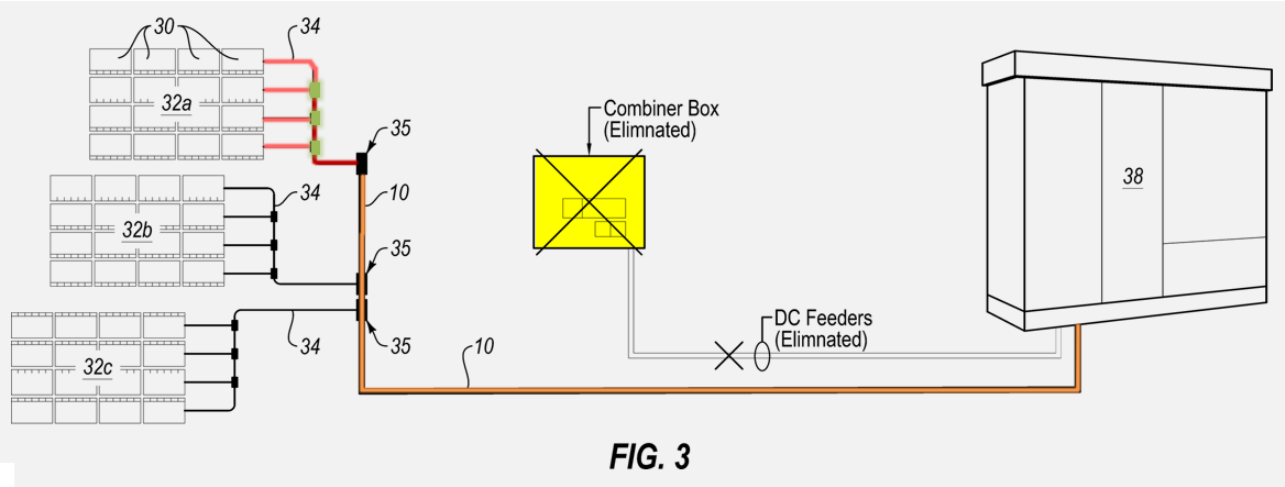


FIG. 3

EX1020, Fig. 3 (annotated); EX1001, Fig. 3. As schematically illustrated below in Figure 7, a drop line (12) connects at one end to a trunk portion of a wire harness (34 in Fig. 3; not shown in Fig. 7); and at the other end, the drop line is secured to the feeder cable (14) by means of a compression lug (20), to form a joint (17):

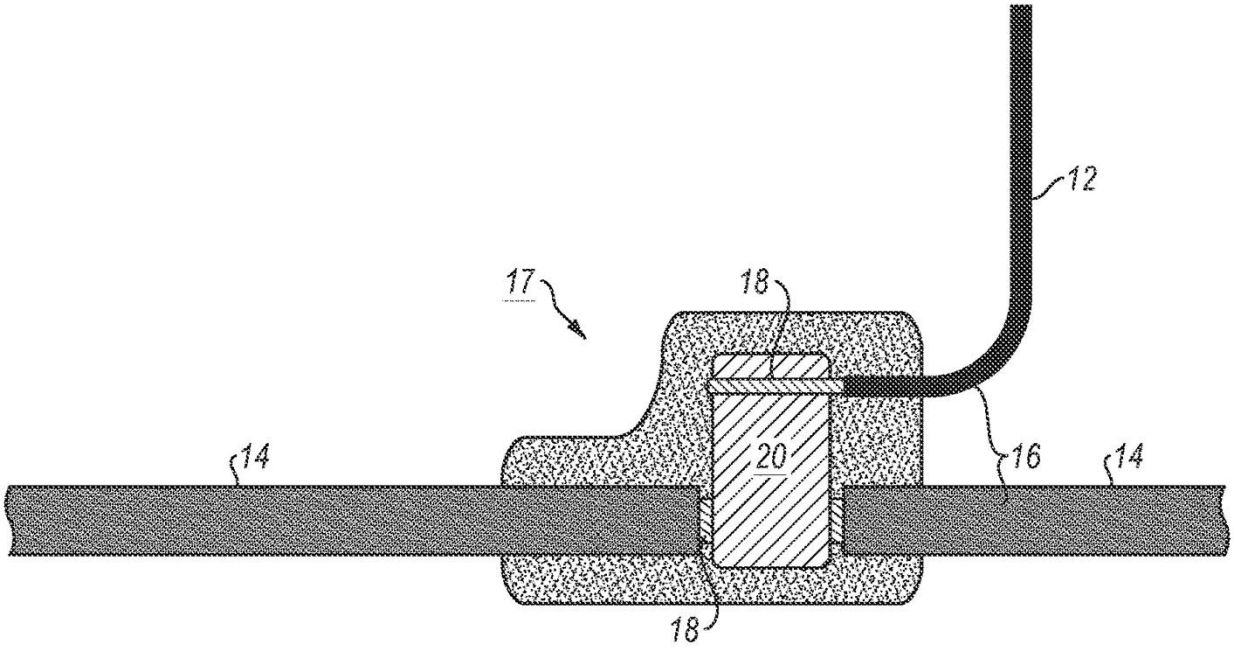


FIG. 7

EX1020, Fig. 7; EX1001, Fig. 7.

The ’254 patent has 15 claims; claims 1, 7, and 14 of the ’254 patent are independent. EX1001, 6:43–7:11, 7:24–8:2, 8:14–53. Claim 1 describes a lead assembly and focuses on the joint; it requires a feeder cable, two drop lines, an undermold, and an overmold. *Id.*, 6:43–7:11. Claims 7 and 14 are directed to a broader solar power system, of which the lead assembly and its joints are a part, with claim 7 describing the system and claim 14 describing the method of constructing it. *Id.*, 7:24–8:2, 8:14–53.

B. The commercial embodiment of the ’254 patent—Shoals’ BLA product—revolutionized the utility-scale solar industry.

As mentioned, the commercial embodiment of the ’254 patent is Shoals’ BLA. The BLA product is *not* an individual joint; rather, the BLA is a complete

assembly (*i.e.*, the "A" in BLA stands for "Assembly") that includes a feeder cable with multiple joints. Figure 6 is instructive:[9]

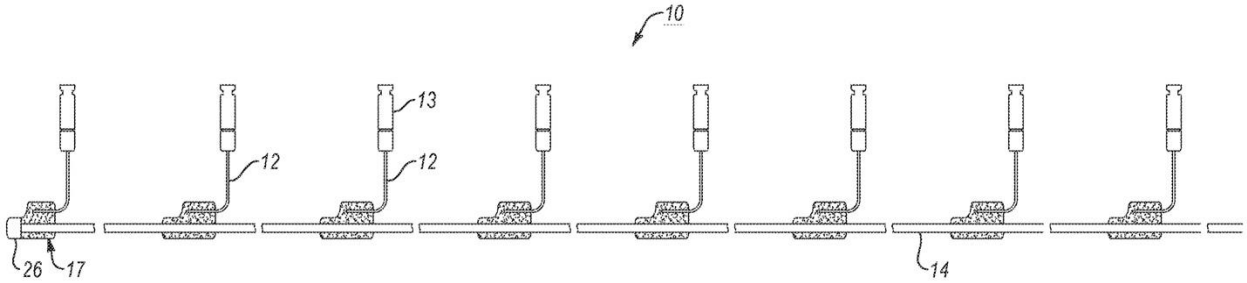
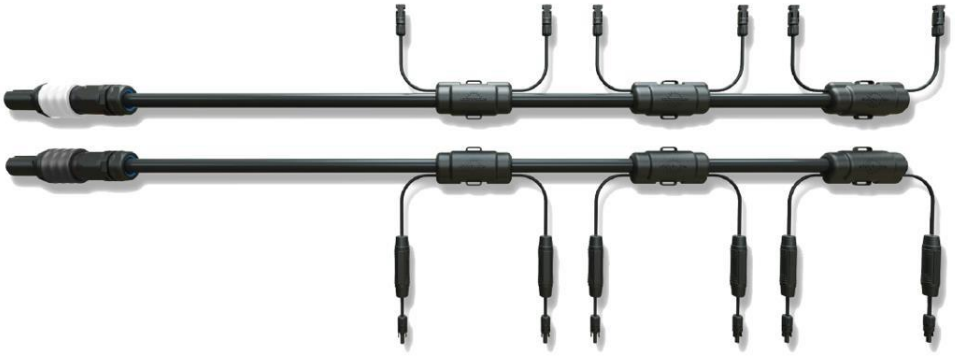


FIG. 6

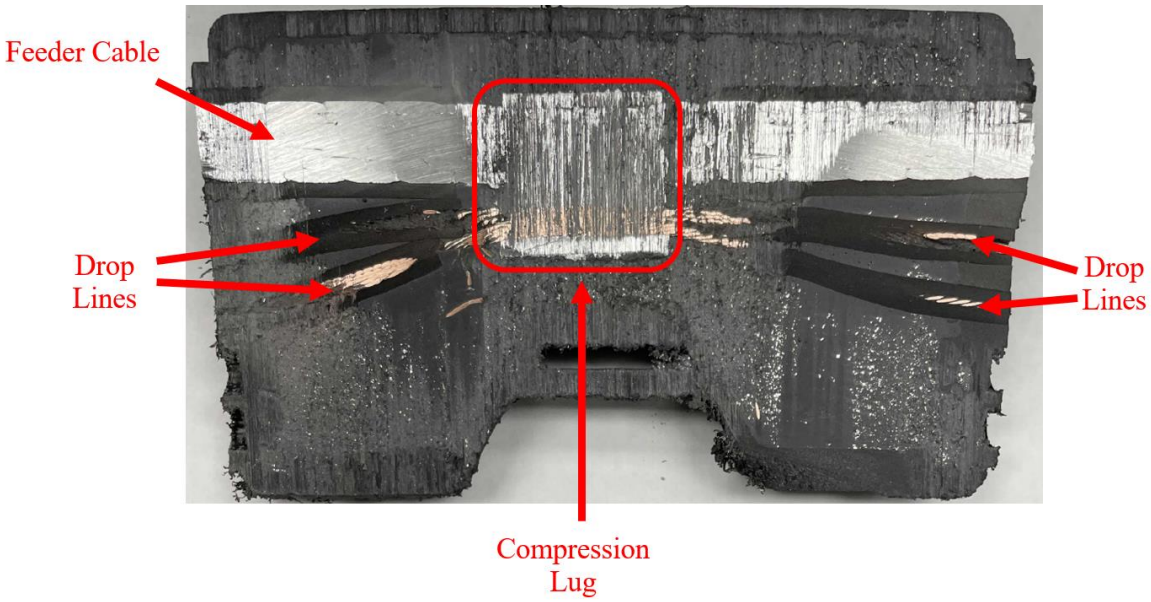
EX1020, Fig. 6; EX1001, Fig. 6.

The patent uses reference number 10 to indicate the lead assembly and reference number 17 to indicate a particular joint on the assembly. EX1001, 4:8, 14. Shoals' BLA is a commercial embodiment of the patent's lead assembly, not its individual joints. Shoals calls its individual joints "mold drops," not BLAs. EX2003, Tr. (Macias) at 119:14–120:11, Tr. (Brooks) at 392:3–393:22, 394:17–395:15 (regarding BLA). A typical pair of BLAs, with three mold drops each, is shown below.

[9] *Unlike* Figure 6, each BLA joint generally has multiple drop lines, not just one.



EX2020, 1 [ITC Hrg. Ex. CX-0167]; EX2021, 7–8 [ITC Hrg. Ex. JX-0099]. Each BLA shown above includes three mold drops along the feeder cable, each of the mold drops has two drop lines; the drop lines of the bottom BLA (the positive BLA) also have inline fuses. The BLAs shown above are exemplary. In reality, each BLA is designed for a particular solar installation. As such, each BLA includes multiple mold drops, and each of the mold drops included in a BLA may include disparate numbers of drop lines based on the individual solar installation design, among other considerations. Below is an internal view of a bisected BLA mold drop, showing the feeder cable and four drop lines, two on each side:



EX2022 [ITC Hrg. Ex. JX-0121] (with annotations). Each BLA mold drop may be made with up to eight drop lines that each electrically connect with the feeder cable via the compression lug.

Before the Shoals BLA, there was a long-felt need to combine power in a distributed manner and deliver that combined power to an inverter without using a combiner box. EX2003, Tr. (Weiner) at 1285:6–10. The "homerun" configuration described above required hundreds (or even thousands) of wire runs from each solar panel to a combiner box, and all had to be connected by licensed electricians. EX1001, 1:20–26, 1:58–2:3, 6:11–14, Fig. 1; EX2023, 18 [ITC Hrg. Ex. JX-0113]. Combiner boxes were necessary in such installations because energy coming from solar arrays must be combined prior to going to the inverter. EX1001, 1:39–42. But these installations were prone to damage and costly to maintain due to problems

with combiner boxes. EX1001, 1:42–49; EX2003, Tr. (Tolnar) at 267:1–268:3, 270:24–271:16. The ’254 patent and the Shoals BLA addressed this need by eliminating the need for a conventional combiner box and thereby avoiding the problems associated with it. EX1001, 1:58–2:3, 6:11–15; EX2024, 7 [ITC Hrg. Ex. CX-0144].

The BLA effectively combines the power from a plurality of solar arrays and consolidates it directly to the feeder cable for delivery to an inverter, eliminating the need for multiple wire runs to a combiner box, which had to be installed by licensed electricians. EX2023, 18, 21 [ITC Hrg. Ex. JX-0113]; EX2003, Tr. (Macias) at 116:2–10; Tr. (Tolnar) at 267:1–269:7. The molded structure of the BLA mold drops ensures an adequate electrical connection between the drop line and feeder cable, protecting it from environmental factors. EX1001, 5:65–6:5; EX2003, Tr. (Tolnar) at 269:8–270:4. By providing a factory-made electrical junction from the wire harness, the BLA revolutionized how utility-scale solar installations are installed. EX2003, Tr. (Macias) at 129:25–130:7.

IV. LEVEL OF SKILL IN THE ART

In the ITC proceeding, Judge Bhattacharyya issued a claim construction order that included a finding as to the level of ordinary skill in the art: someone with “at least a bachelor’s degree in mechanical or electrical engineering or a related scientific field and at least two years experience working with photovoltaic

systems and electrical wiring, with recognition that more education could substitute for experience and that experience combined with training could substitute for formal education." EX1017, 12. A photovoltaic (PV) system is a solar electricity generation system in which "PV conversion produces electricity directly from sunlight in a photovoltaic cell." EX2014, 4; EX2015, 1. Voltage argued at the ITC, as it does here, that photovoltaic experience—solar experience[10]—is unnecessary for understanding how a POSA would have viewed a patent having "lead assembly for connecting solar panel arrays" in its title and "solar arrays" in each and every claim. Pet., 9; EX1001. Judge Bhattacharyya correctly rejected that argument.

Judge Bhattacharyya was right about the level of skill requiring solar experience, as application of the law to the facts confirms. The level of ordinary skill in the art may be determined by reference to several factors, including "(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in

[10] POSAs tend (now and in 2014) to use PV, photovoltaic, and solar interchangeably when referring to energy producing systems. EX2001, ¶ 48. Shoals does the same herein.

the field." *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007) (citation and quotation marks omitted). "These factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art." *Id.*

The lead assembly claimed in the '254 patent is a component of what is typically referred to in the solar industry as Electrical Balance of Systems, or EBOS. EX2001, ¶ 8. EBOS components include things such as wire harnesses, connectors, fuses, combiner boxes, inverters, and other components used in the collection and storage of energy generated by solar power systems. EX2001, ¶ 8. According to Mr. Weiner, innovation was "endemic" to solar EBOS around the time of filing for the '254 patent. EX2001, ¶ 27. The '254 patent's sole named inventor, Dean Solon, was prolific during that period, filing ten different EBOS patent applications between 2010 and 2014, including the application for the '254 patent. *Id.* at ¶ 27–28. EX1001; EX1005; EX2004; EX2006–EX2012.

By the early 2010s, the solar field had matured to the point of specialization. Within the field, people and companies were increasingly specialized between "rooftop" systems, on the one hand, and utility-scale systems, on the other. Component designers were increasingly specialized between panels, EBOS, and other BOS (Balance of Systems) components. EX2001, ¶ 29. Mr. Weiner's declaration outlines the timeline, including the creation of regulatory articles devoted to solar installations (EX2005, 690.31(A)), the introduction of the first

solar PV installer certification examination (EX2013, 2), and the generation of new product safety standards (EX2005, Annex A), to name a few. EX2001 ¶ 29.

As for types of problems encountered, solar EBOS presents unique challenges. To put solar EBOS into context, according to the U.S. Energy Information Administration's website:

> The United States uses many different energy sources and technologies to generate electricity. …
>
> The three major categories of energy for electricity generation are fossil fuels (coal, natural gas, and petroleum), nuclear energy, and renewable energy sources.

EX2014, 1; EX2001, ¶ 30.

Renewable energy sources are further subdivided into wind, hydro, biomass, geothermal—and solar. EX2014, 1; EX2001, ¶ 31. "Photovoltaic (PV) and solar-thermal power are the two main types of solar electricity generation technologies." "Most solar-thermal power systems use steam turbines to generate electricity," just like fossil fuel and nuclear power systems. Photovoltaic systems are different: "PV conversion produces electricity directly from sunlight in a photovoltaic cell" with each PV cell generating around 1–2 Watts. EX2014, 1; EX2001, ¶¶ 32, 33. To be useful for larger-scale electricity generation, PV cells are electrically connected in a packaged, weather-tight PV *module*. EX2015, 2; EX2001, ¶ 33. PV modules may then be wired together thereby aggregating the generated power. EX2015, 2.

PV systems create direct current (DC) electricity while steam and other turbine systems, on the other hand, typically generate alternating current (AC) electricity. "Nearly all electricity is supplied as alternating current (AC) in electricity transmission and distribution systems;" likewise, nearly all the electricity used by consumers (residential and commercial) is also AC. EX2015, 2; EX2001, ¶ 34.

The fact that PV electrical generation uses panels of PV cells, rather than turbines, must be borne in mind in evaluating the transferability of technology from non-PV environments to PV environments. EX2001, ¶ 35. In particular, any electricity-generating system will have BOS (including EBOS) components for taking electricity generated by those production components to the "grid" through which the electricity will be distributed. But PV BOS has to work with electricity-producing components that are relatively much more dispersed than in turbine systems. PV BOS will generally have much greater outdoor, environmental exposure than turbine BOS because, unlike turbines, solar panels cannot be housed in a dam or powerplant building. Also, PV BOS consists mainly of DC power rather than AC power. EX2001, ¶ 35.

As Mr. Weiner indicates, regulatory considerations amplify the weight of the technical distinctions between PV and non-PV installations. *Id.*, ¶ 36. Codes generally require electrical system components to be certified by a nationally

recognized Testing Laboratory, or NRTL. *Id.* Because certification is both structure- and use-specific, changing either the structural characteristics or the use of a component requires re-certification. And there is no guarantee that certification will be made for either the modified structure or the alternative use. *Id.* In addition, there is no guarantee that the same device is certified at different points in time. Regulations change with the evolution of the technology and the understanding of the risks associated therewith. *Id.* This is particularly true of PV installations in the past several decades as the technology has undergone technological shifts commensurate with burgeoning, widespread technology. *Id.*

As Mr. Weiner testifies, "these differences between PV and other forms of electricity generation should be accounted for, when describing a POSA." *Id.*, ¶ 37. This is particularly true because the '254 patent is solar PV-specific on its face. This is reflected in its title, abstract, the preambles of each independent claim, and many other claim elements that specifically recite "solar module," "solar array," and "solar panel." EX1001; EX2001, ¶ 38.

In view of the foregoing, Shoals agrees with Judge Bhattacharyya's determination in the ITC proceeding that the level of ordinary skill in the art requires at least two years of experience working with photovoltaic systems and electrical wiring. EX1017, 12; EX2001, ¶ 39.

V. CLAIM CONSTRUCTION

Voltage's petition fails for a number of reasons, but none is affected by the meaning of the claim language. Shoals therefore takes no position at this time regarding claim construction but reserves the right to do so if trial is instituted.

VI. THE PETITION FAILS TO SHOW A REASONABLE LIKELIHOOD THAT VOLTAGE WOULD PREVAIL IF TRIAL WERE TO BE INSTITUTED.

The petition fails in a variety of ways to make the showing required by statute: "that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). For all four asserted grounds, the rationales for the alleged motivations to combine the asserted references are conclusory and unsupported, except by the equally unsupported testimony of an alleged expert with no experience working with solar PV technologies. The petition also fails to address all four *Graham* factors, notably omitting the objective indicia of nonobvious despite knowing of all the evidence and argument presented during discovery in the ITC proceeding and at the evidentiary hearing. Grounds 1, 2, and 3 rely on Amphenol as a base reference, but a true solar industry POSA would not read that document the way Dr. Kenny does, and in any case the evidence fails to show it was publicly available before September 2014. Grounds 1, 2, and 4 rely in part on Shao, but its teachings are not analogous to those of the '254 patent, so it is not a reference within the range of art

that a POSA would have considered. Ground 4 provides no evidence that a POSA would have had a reasonable expectation of success in combining Yamawaki with Shao.

A. The petition fails to confront commercial success and other known evidence of objective indicia of nonobviousness.

Obviousness is a question of law based on underlying facts. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 427 (2007). The underlying facts are the four *Graham* factors, namely: (1) the scope and content of the prior art; (2) differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art; and (4) objective indicia of nonobviousness, often called secondary considerations, such as long-felt but unmet need, industry skepticism, industry praise, and commercial success. *Id.*; *Graham*, 383 U.S. at 17–18. A determination of obviousness "requires consideration of all four *Graham* factors, and it is error to reach a conclusion of obviousness until all those factors are considered." *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc). Voltage's burden as the petitioner was to show a "reasonable likelihood" of prevailing on the issue of obviousness at the petition stage, so a wholesale failure to address known evidence of one of the four *Graham* factors—factor (4) regarding objective indicia of nonobviousness—amounts to a failure to carry that burden, because "[o]bjective indicia of nonobviousness must be considered in every case where present." *Id.*

The evidentiary hearing in the ITC proceeding was the culmination of a one-year investigation in which Shoals disclosed to Voltage, and put through the adversarial crucible, evidence of objective indicia of nonobviousness. The hearing dealt solely with the ’153 patent—a continuation of the ’254 patent—but the evidence presented there and shared during discovery centered on its commercial embodiment, the BLA, which is also the commercial embodiment of the ’254 patent. The objective indicia evidence showed the BLA’s (1) long-felt but unmet need, (2) industry skepticism, (3) industry praise, and (4) commercial success. At the hearing, through three fact witnesses and two experts, Shoals presented considerable testimonial and documentary evidence as to each of these issues. Voltage did not present any rebuttal evidence at the hearing. Shoals incorporated that same hearing evidence into its post-hearing briefs. EX2016, § VII.F (pp. 125–132); EX2017, § VI.C (pp. 56–57).[11] Voltage failed to identify any countervailing

[11] Shoals does not seek here to circumvent the word-count limitation by referring to these arguments or to the evidence cited therein. Rather, the point is to illustrate that the objective indicia issues were undeniably disclosed to Voltage at the hearing and in the months leading up to it, in a manner and with the kind of clarity and evidentiary support that remove any possibility that Voltage was unaware of any such evidence when preparing its petition.

evidence in its responsive post-hearing brief, EX2019, or in its initial brief, EX2018.[12]

The Board has seen this scenario before and has "cautioned petitioners … that petitions may be denied if they do not address ***known evidence of secondary considerations***." *Stryker Corp. v. KFx Medical, LLC*, No. IPR2019-00817, Paper 10 at 28–29 (PTAB Sept. 16, 2019) (citing *Robert Bosch Tool Corp. v. SD3 LLC*, IPR2016-01751, Paper 15 at 23 (PTAB Mar. 22, 2017) (denying institution in view of objective indicia presented during an ITC proceeding[13] but not addressed in

[12] Exhibits 2016–2019 are the redacted public versions of these briefs, retrieved from the ITC's EDIS electronic filing system, *https://edis.usitc.gov*., as is the consolidated transcript of Exhibit 2003. Shoals represents, per its duty of candor, that it holds a good faith belief that the redactions do not obscure any evidence, testimony, or argument from Voltage regarding objective indicia of nonobviousness.

[13] The ITC proceeding in the *Robert Bosch* case had ended, with a final determination by the judge upholding validity and relying in part on "very strong" secondary considerations evidence. Paper 15 at 23. The Board therefore took the unusual step of considering that evidence at the petition stage. *Id.* The initial

petition)); *Coalition for Affordable Drugs V LLC v. Hoffman–LaRoche, Inc.*, IPR2015–01792, Paper 14 at 18 (PTAB Mar. 11, 2016) (denying institution, in part for failure to address objective indicia considered by Examiner during original prosecution).

The Board should thus deny Voltage's petition for failure to address all four *Graham* factors despite knowing of Shoals' concrete and crystalized arguments and evidence regarding objective indicia of nonobviousness.

B. Dr. Kenny lacks solar experience and is therefore not qualified to testify as to the perspective of a person of skill in the art.

Obviousness is evaluated from the POSA's perspective. *Otsuka Pharm. Co., v. Sandoz, Inc.*, 678 F.3d 1280, 1296 (Fed. Cir. 2012) ("[w]hat matters is the path that the person of ordinary skill in the art would have followed, as evidenced by the pertinent prior art"). The views of non-POSAs on these issues are thus irrelevant distractions. *Kyocera Senco Indus. Tools Inc. v. Int'l Trade Comm'n*, 22 F.4th 1369, 1376–78 (Fed. Cir. 2022). But Voltage has not provided ***any*** analysis of obviousness from the perspective of a POSA in the field of the'254 patent having ***solar experience***, as required by Judge Bhattacharyya's order in the ITC proceeding. *See* § IV, above.

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determination in Shoals' ITC case against Voltage, 337-TA-1365, is not expected until August 30, 2024. *See* EDIS Doc. ID 829425.

Dr. Kenny, although certainly qualified in other areas, admitted in the ITC that he has "no experience with photovoltaic systems," EX2003, 1231:22–24, professional or otherwise, *id.*, 1187:1–11, 1221:3–19, 1226:8–1229:22, 1228:20–1229:2; EX2001, ¶ 43. Dr. Kenny is thus not a POSA under the correct definition from the ITC claim construction order, which requires "at least two years experience working with photovoltaic systems." EX1017, 12; EX2001, ¶ 43. Neither Dr. Kenny nor Voltage contests this point. Instead, they double-down by arguing that Dr. Kenny's physics education and work with robotics are all that is needed. EX1003, ¶¶ 49, 50. As a result, each and every one of Dr. Kenny's opinions is simply that—his opinion. None even purports to be the opinion or understanding of a POSA having solar experience.

To be sure, the record from the ITC proceeding effectively precludes Dr. Kenny from attempting to spin his qualifications to include solar industry experience or education in photovoltaic systems. He admitted having no such experience and no such education, so he cannot substitute his lack of practical experience with additional education. EX2003, 1187:1–11, 1221:3–19, 1231:22–24. He testified at the ITC that he did not take any "classes that were specific to any content that is related to installing or building solar installations." EX2003, 1229:14–16. Indeed, in response to Judge Bhattacharyya's direct inquiry about his experience with such systems, Dr. Kenny could only muster that it was "part of

[his] education in physics" in that he worked with "semiconductor devices" where electrons flow through band structures where energy may be extracted. *Id.*, 1186:23–1187:7; EX2001, ¶ 43. Dr. Kenny admits in the present case, however, that "[t]he '254 Patent does not cover any of the technology that is represented by the semiconductor devices within the solar panels that convert sunlight to electrical energy." EX1003, ¶ 21. In any case, understanding semiconductor physics is a far cry indeed from experience in photovoltaic ***systems***, their layout, construction, and infrastructure. EX2001, ¶ 43.

Dr. Kenny also testified at the ITC that he has not authored any papers that include solar-related subject matter; that he has not participated in symposia related to solar installations; and that he has not testified as an expert witness in any solar cases. EX2003, 1226:8–1229:22. He agreed that the word "solar" does not appear on his résumé, and that he has not consulted or advised on the design or implementation of a solar installation of any size. *Id.*, 1228:3–10. In fact, Dr. Kenny testified that his only solar experience was related to personal use of "low-power applications for consumer-grade electronics," *e.g.*, charging phones and camping trips. *Id.*, 1228:20–1229:2; EX2001, ¶ 44.

Further, Dr. Kenny admitted that he does not have any solar-related certifications or accreditations, nor does he have any working knowledge of codes or standards that relate to solar, prior to his work on this case, such as, for example,

sections of the National Electrical Code (NEC) that govern solar installations. EX2003, 1229:18–22. Dr. Kenny was indeed fairly emphatic on this point:

> Q. [D]id you have any familiarity or working knowledge of the National Electrical Code as it pertains to solar?
>
> A. ***Almost certainly not.***

Id. Thus, while a ***POSA*** would certainly have been familiar with the applicable NEC sections, Dr. Kenny is not a POSA and is in no position to divine what a POSA would have understood of them. EX2001, ¶¶ 45–46.

Moreover, the POSA in 2014 would have looked to the then-current NEC, not the 2002 version that Dr. Kenny points to, filed as EX1010. The NEC was updated at least in 2011 and 2014 (EX2005), both of which were much more relevant in 2014 to the state of the art and to those working in the field of the '254 patent. EX2001, ¶ 47. Indeed, reliance on the 2002 version of the NEC in the 2014 timeframe would have constituted a serious health and safety risk. EX2001, ¶ 48. In the twelve-year period between the 2002 and 2014, safer products, means, and methods were created to improve the functionality and safety of solar installations, particularly for EBOS. *Id.* The 2002 version of Article 690 (Solar Photovoltaic (PV) Systems) is indeed less than two-thirds the length of the 2014 version. *Compare* EX1010 *with* EX2005. As such, a POSA in 2014 would never have looked to the 2002 version of the NEC for guidance because doing so would have created an unnecessary risk. EX2001, ¶ 48.

Looking to an outdated NEC is not Dr. Kenny's only mistake. He also cites to a chapter from a solar textbook from *2001* (EX1011) which, even in 2014, was woefully out of date. EX2001, ¶ 47. These mistakes further underscore Dr. Kenny's complete lack of experience with solar power generation systems and consequent inability to speak to the state of the art or the POSA perspective in 2014. Weighing them with his admitted lack of experience and training in the solar field, Shoals' expert Mr. Weiner has formed the opinion that Kenny is not a POSA, is not capable of speaking to the understanding of a POSA in 2014, and that his opinions on what would have been obvious to a POSA at that time should be given no weight. *Id.*, ¶¶ 49–50. Accordingly, Mr. Weiner would not look to Dr. Kenny as a credible candidate to assist in the design of solar installations, much less offer an expert opinion that is deeply intertwined in the design complexity of solar installations. *Id.*, ¶ 42.

The law and Mr. Weiner are in agreement on this point. "Issues of infringement and validity 'are analyzed in great part from the perspective of a person of ordinary skill in the art,' such that ***a witness who is 'not qualified as an expert by knowledge, skill, experience, training, or education in the pertinent art ... [cannot] assist the trier of fact to understand the evidence or to determine a fact in issue***.'" *HVLPO2, LLC v. Oxygen Frog, LLC*, 949 F.3d 685, 688–89 (Fed. Cir. 2020) (citations omitted). Indeed, the Federal Circuit has recently commented

that POSA-level testimony from one who lacks POSA qualification could "serve[] only to cause mischief and confuse," and "amount[ ] to nothing more than advocacy from the witness stand":

> To offer expert testimony from the perspective of a skilled artisan in a patent case—like for claim construction, validity, or infringement—a witness must at least have ordinary skill in the art. ***Without that skill, the witness' opinions are neither relevant nor reliable.*** The opinions would not be based on any specialized knowledge, training, or experience that would be helpful to the factfinder. In fact, "[a]dmitting testimony from a person ... with no skill in the pertinent art serves only to cause mischief and confuse the factfinder." *Sundance*[*, Inc. v. DeMonte Fabricating Ltd.*], 550 F.3d [1356,] 1362 [(Fed. Cir. 2008)]. That testimony would "amount[ ] to nothing more than advocacy from the witness stand." *Id.* at 1364–65.

Kyocera, 22 F.4th at 1376–78 (bracketed case citation material added).

Dr. Kenny has neither the experience nor the educational training in the field of photovoltaic systems required of a POSA under the correct definition. The Board should thus assign no weight to Dr. Kenny's testimony insofar as it purports to state the views of a POSA in 2014.

C. Dr. Kenny's lack of experience in the solar industry is highly impactful in this case.

At 248 pages, Dr. Kenny's declaration is nearly two-and-a-half times the length of Voltage's 104-page petition. Dr. Kenny fills that extra space with text

and annotated figures; an effort that provides an outward appearance of substance and depth. In reality, the extra space only throws a spotlight on Dr. Kenny's lack of understanding of the challenged claims, arising from his lack of solar industry experience. As addressed below, some of it could work to Voltage's benefit—at Shoals' expense—if taken at face value as the vaunted views of a true POSA. These parts are neutralized once understood as the speculative musings of a witness with no relevant experience. Examples include Dr. Kenny's interpretation of the stylized solar array illustration in Amphenol, EX1007, 5, and his glib proclamation that "electrons are electrons" so the claimed technology cannot be specific to solar installations. EX1003, ¶¶ 65, 87. Other parts of Dr. Kenny's testimony are so clearly conclusory and unsupported that they work to Voltage's detriment. The rationales he tries to state as driving the motivations to combine the asserted references are the main members of this class. His lack of solar industry experience left him with nothing of substance to say about these alleged rationales.

1. Dr. Kenny's testimony about what a POSA would have understood about industry terminology and the prior art cannot be trusted.

Dr. Kenny's declaration includes an 8-page, 8-paragraph section purporting to speak to the "terminology" of the '254 patent. EX1003, ¶¶ 82–89. The bloc is cited one time in the petition, as support for a single paragraph in the claim construction section, but not in relation to any of the three claim terms for which

Voltage proposes construction: aperture, undermold, and overmold. Pet., 10–11. Rather, the purpose appears to be to blur the meanings of the specific claim language "lead assembly," "feeder cable," drop line," and "wire harness" so as to make it easier for Dr. Kenny to find them in the asserted art references without being hamstrung by the actual meaning of the claim language under *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). This is especially evident from Dr. Kenny's flawed interpretation of Amphenol, discussed in detail at section VI.D.2, below.

Despite recognizing that the '254 patent "uses [this] particular terminology for various elements of its wiring assemblies," the petition proclaims "a POSITA would understand that such terminology is not universal within the industry, and thus do[es] not define specific structures." *Id.* This assertion is internally inconsistent, since it both recognizes use of the "particular terminology" with "various elements," and simultaneously disavows the implications of that use. The language means whatever it means under *Phillips*, based on the surrounding claim language, the remainder of the specification including the drawings, the prosecution history, and, of course, the plain meaning as understood by a POSA having read and understood all of these things. *Phillips*, 415 F.3d at 1313–1314.

But Voltage does not attempt a proper construction. Instead, and citing Dr. Kenny for support, Voltage argues that this "particular terminology" has no

confined meaning based on its use in the patent, because Dr. Kenny's alleged understanding of how language is used "within the industry" should override. This effort is triply flawed. First, a proper claim construction is required to support the dubious conclusion that the claim language "do[es] not define specific structures." As noted, Voltage avoids that exercise. Second, "conclusory, unsupported assertions by experts," like Dr. Kenny, "as to the definition of a claim term are not useful to a court." *Phillips*, 415 F.3d at 1318. Without a proper construction, through which Dr. Kenny's views would be considered along with the intrinsic evidence and either given credence or discarded, his eight-page musing on claim language without reference to the intrinsic record is the very portrait "conclusory, unsupported assertions."[14]

[14] Paragraph 85, alone, includes citations to the '254 patent and its prosecution history, but no explanation is provided to explain how the cited portions support the stated proposition, nor is it in any way self-evident. Specifically, Dr. Kenny points without elaboration to the prosecution history (EX1002) to argue that the "main cables supplying power and carrying higher currents may be called 'trunks,' 'trunk cables,' 'trunk conductors,' 'main cables,' 'feeder cables,' or the like," and that "the smaller diameter cables branching off a main cable and carrying lower currents may be called 'branches,' 'branch cables,' 'branch conductors,' 'branch

The third flaw is that "the industry" is the solar industry, as established above at section IV. Dr. Kenny's views are thus uninformed and of no value because, as also established above (at section VI.B), Dr. Kenny has no experience in the solar industry and is not qualified to cast his own views as those of a POSA, or to guess at what a POSA would have known or understood. In addition, Voltage essentially admits "the industry" is the solar industry by arguing in this same single paragraph straddling pages 10 and 11 of the petition that the terms "'trunk' or 'main cable' may refer to 'feeder cable,' 'branch,' 'drop,' 'input,' 'string,' or 'drop line' for wires ***transmitting electric current between solar panels***." Pet., 11.

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lines,' 'drop lines,' or the like." EX1003, ¶ 85 (citing EX1002 at, respectively, 130–132, 143 and 150). Similarly, Dr. Kenny cites lines 5–20 of column 2 of the '254 patent (EX1001) as support for the argument that "wiring assemblies that join electrical components and/or wires may be called 'wire harnesses,' 'lead assemblies,' 'wiring apparatus,' or the like depending upon local and/or regional parlance." EX1003, ¶ 85. Again, no explanation is given and none is self-evident. In all instances, however, Dr. Kenny includes citations to various *extrinsic* evidence, and maybe that is where he thinks the support lies. But ultimately he provides nothing to justify elevating his arguments over the meaning dictated by a proper *Phillips*-style claim construction.

There are other indicators throughout his declaration that Dr. Kenny's opinions cannot be taken at face value, given his willingness to offer them without adequate grounding. One is his repeated citations to the outdated 2002 version of the NEC (EX1010) and the dangerously stale 2001 solar textbook (EX1011). *See* EX2001, ¶¶ 47–48 (Mr. Weiner noting the risks associated with relying on these outdated texts, even in 2014). Dr. Kenny cites the 2002 NEC at 19 paragraphs, with eight of them further including a citation to the 2001 solar textbook. *See* EX1003, ¶¶ 37, 82, 84, 85, 89, 91, 264, 268 (citing both EX1010 and EX1011) and ¶¶ 68, 76, 77, 83, 114, 136, 212, 215, 395, 467, 471 (citing EX1010). Dr. Kenny's selection of these outdated solar works underscores his lack of solar experience. But the citations to NEC 2002 (EX1010) are particularly egregious given Dr. Kenny's admission at the ITC hearing that he "[a]lmost certainly [did] not" have any experience or familiarity with the NEC as it pertains to solar. EX2003, 1229:18–22.

The upshot of all of this is that Dr. Kenny's testimony cannot be trusted where he is either expressly purporting to state the views of a POSA, or impliedly doing so by purporting to interpret the disclosures of the asserted art references. *See* EX1003 at, *e.g.*, ¶¶ 76, 82–89, 268. The only patentability issue in this case is obviousness, which relies very heavily on the perspective of a POSA as of the priority date. Voltage and Dr. Kenny try to argue that solar experience is not

necessary, but the only relevant question is how someone with solar experience in September of 2014 would have understood the teachings of Amphenol, for example. Dr. Kenny's reductive proclamation that "electrons are electrons" betrays the fact that he lacks the perspective to appreciate the perspective of someone with solar industry experience, who would approach their work with both the challenges and the opportunities that would have been unique to designing and operating utility-scale solar installations.

2. Dr. Kenny's testimony about the POSA's alleged motivations to combine is conclusory and unsupported, and offered without the benefit of solar industry experience.

For each of the four asserted grounds, the petition provides a short recitation at the beginning of the alleged reasons why a POSA would have been motivated to combine the asserted references to arrive at the claimed invention, citing support from Dr. Kenny. The collective page length of Dr. Kenny's motivation-to-combine declaration sections (including reference overviews) exceeds the petition's argument pages on these subjects by 69 pages. That amounts to over 13,000 words.[15] The Board should disregard Dr. Kenny's excess pages as an improper

[15] https://wordcounter.net/words-per-page.

circumvention of the 14,000 word-count limit and a violation of the rule against incorporation by reference.[16]

But even if given substantive consideration, none of the motivation-to-combine arguments withstands scrutiny because each is conclusory and unsupported other than by Dr. Kenny's equally conclusory and unsupported declaration testimony. The rationales fall into five general categories: (i) similarity of the references, (ii) what a POSA would "naturally" have done, (iii) expected benefits, (iv) technical feasibility, and (v) reasonable expectation of success

Critical to assessing the stated rationales is the principle that "obviousness concerns whether a POSA not only ***could have made*** but ***would have been motivated to make*** the combinations or modifications of prior art to arrive at the

[16] There are four petition pages for Ground 1, three for Ground 2, four pages for Ground 3, and two for Ground 4. Pet., 12–15, 46–48, 49–52, 70–71. Dr. Kenny's declaration support for these 13 petition pages consists of 104 paragraphs across 61 pages. EX1003, ¶¶ 90–126, 236–251, 263–299, 375–388. The petition includes no substantive overview of the asserted references, but Dr. Kenny dedicates 26 paragraphs spanning some 21 pages to describe each, in a manner that best suits his and Voltage's ends. EX1003, ¶¶ 65–68 (Amphenol), ¶¶ 69–71 (Shao), ¶¶ 72–81 (Yamawaki), ¶¶ 234–235 (Tamura), ¶¶ 256–262 (Yu).

claimed invention." *Belden Inc. v. Berk–Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (emphases in original). This means more than simply describing a ***possible*** rationale, with the benefit of hindsight. *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) ("we cannot allow hindsight bias to be the thread that stitches together prior art patches into something that is the claimed invention"). It means presenting evidence that shows a POSA ***at the time of invention*** would have seen and understood a reason for combining or modifying the references. *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 993–994 (Fed. Cir. 2017). If the evidence shows "no more than that a skilled artisan, once presented with the two references, would have understood that they ***could be*** combined…. that is not enough." *Id*. (emphasis in original). To support a finding of obviousness, the evidence must at least "imply a motivation to pick out those two references and combine them to arrive at the claimed invention." *Id*. The petition must therefore provide evidence that shows one of ordinary skill in the art at the time of invention would have seen a reason for combining these references. The petition in this case fails to do so.

a. Similarity of the references is not sufficient to establish a motivation to combine.

The petition often argues that an alleged similarity of references can provide a motivation to combine them. For example, Voltage contends for Amphenol and Shao that "the underlying mechanics, materials, assembly processes, molding

processes, and other details are similar such that a POSITA would have been motivated to consider both publications in combination." Pet., 12. The petition does not explain why that is so, nor does Dr. Kenny at ¶ 91, cited as support. In any case, similarity in subject matter, even if proven, is insufficient to establish that a POSA would have been motivated to combine references. *Microsoft Corp. v. Enfish, LLC*, 662 F. App'x 981, 990 (Fed. Cir. 2016) (unpublished) (holding that the fact that two references "were directed to the same art or same techniques" was "inadequate to show persuasively that a relevant skilled artisan would have been motivated to combine the references"); *see also Securus Techs., Inc. v. Global Tel*Link Corp.*, 701 F. App'x 971, 977 (Fed. Cir. 2017) (unpublished) ("[A] broad characterization of [prior art references] as both falling within the same alleged field … without more, is not enough for [Petitioner] to meet its burden of presenting a sufficient rationale to support an obviousness conclusion."); *see also Salpeter v. Wave*, IPR2019-01384, Paper 12 at 17 (PTAB Jan. 27, 2020) ("Simply contending that it would have been obvious to combine these references 'as they involved the same system being used' is no reason."). Indeed, even demonstrating that a reference is relevant to the field of endeavor of the *challenged patent* "is not sufficient to establish that one of ordinary skill would have had reason to combine its teachings with other prior art in the manner set forth in the claim." *Johns*

Manville Corp. v. Knauf Insulation, Inc., IPR2018-00827, Paper 9 at 10 (PTAB Oct. 16, 2018) (informative).

At most, establishing that references are similar in subject matter merely shows that an ordinary skilled artisan ***could have*** combined their teachings; not that such an individual ***would have*** done so. *Id.* (denying institution where petitioner failed to establish a sufficient rationale to combine, in showing only that the references were analogous and ***could*** be combined, without showing that a skilled artisan ***would*** have made the modification) (informative).

The petition sometimes invokes the similarity rationale by labeling the references as "analogous." *E.g.*, Pet, 12, 14, 51. This fails for the same reason, but for the additional reason that analogousness is a separate legal concept, used for evaluating the availability of a given reference as prior art to the claims under attack. *Sanofi-Aventis Deutschland GmbH v. Mylan Pharmaceuticals Inc.*, 66 F.4th 1373, 1377 (Fed. Cir. 2013). If not analogous, then the reference is not one available for POSAs to consider. *Id.* As discussed in section VI.E, below, Shao is an example of a non-analogous art reference.

b. An assertion regarding a natural inclination of a POSITA is not sufficient to establish a motivation to combine.

Voltage argues at times that "the most natural arrangement of elements" is what would have inspired modifying or combining the references. Pet., 25, 57, 78.

The use of phrases like "would naturally have included," "would be logical," and "could be, and most logically would be," without facts to support a conclusion that a POSITA ***would have*** made a proposed combination, are insufficient to establish a motivation to combine. *See*, *e.g.*, *Apple Inc. v. MPH Techs. Oy*, 28 F.4th 254, 262–63 (Fed. Cir. 2022) (finding expert testimony conclusory and improperly guided by hindsight based on use of the phrases: "would naturally have included"; "would be logical"; and "could be, and most logically would be"). In any case, Dr. Kenny provides no support for the alleged "naturalness," so the contention is unsupported and conclusory in addition to being legally deficient.

c. An unsupported allegation of expected benefits is not sufficient to establish a motivation to combine.

Voltage often invokes the promise of expected benefits as the driving motivation to combine. *See* Pet, 13 ("lead assemblies and solar photovoltaic power generation systems of Amphenol … would benefit from added protections from the elements and improved reliability for the branch structures provided by the robust design and manufacturing processes for the connectors disclosed in Shao"); see also *id.* at 14, 15, 19, 22, 24, 25, 27, 29, 30, 32, 47, 50–53.

Voltage fails to explain why the described benefit would have been desirable enough to have motivated the combination. An unsupported allegation of benefits to be achieved, without facts to support a conclusion that a POSITA ***would have*** made the proposed combination is insufficient to establish a motivation to

combine. *Amneal Pharmaceuticals LLC v. Cubist Pharmaceuticals LLC*, No. IPR2020-00193, Paper 7 at 31 (PTAB May 29, 2020) (holding that petitioner's assertion that a proposed combination would "improve the stability" of a composition falls short of petitioner's burden to point out with particularity why the specific combination being proposed would have been made); *see also Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-00582, Paper 34 at 21–22 (PTAB Aug. 5, 2019) (informative) (concluding that "generic desire" and a "bald statement about what could have been achieved" by combining the art were insufficient); *see also Johns Manville Corp. v. Knauf Insulation, Inc.*, No. IPR2018-00827, Paper 9 at 11–12 (PTAB Oct. 16, 2018) (informative) (concluding that generic assertions about interchangeable binders in a claimed thermosetting composition were insufficient to meet petitioner's burden).

d. An unsupported allegation of technical feasibility or simplicity of a combination is not sufficient to establish a motivation to combine.

Voltage argues that "Shao's method … could be applied to the products disclosed in Amphenol," and makes similar claims of technical feasibility for other combinations. Pet., 12, 21, 49, 59, 61. Dr. Kenny is not qualified to make this assessment, and neither he nor the petition point to any other evidence that would prove it so. Voltage thus fails to support its assertion with any facts to support or explain why a POSA would have made the proposed combination. An unsupported

allegation of technical ease, without facts to support a conclusion that a POSA *would have* made the proposed combination is insufficient to establish a motivation to combine. *In re Nuvasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (“‘conclusory statements’ alone are insufficient and, instead, the finding of obviousness must be supported by a ‘reasoned explanation’”).

e. An unsupported allegation of an expectation of success is not sufficient to establish a motivation to combine.

Voltage argues that POSAs would have expected success in making the asserted combinations, but never adequately supports these contentions. *See* Pet., 15, 48, 71. It is insufficient to simply assert the existence of a reasonable expectation of success. An unsupported allegation of expected success, without facts supporting why a person of ordinary skill in the art ***would have*** had a reasonable expectation of success are insufficient to establish a motivation to combine. *See In re Stepan Co.*, 868 F.3d 1342 (Fed. Cir. 2017) (vacating decision holding claims obvious because, in part, the Board failed to “articulate why a person of ordinary skill in the art would have had a reasonable expectation of success to formulate the [claimed invention]”).

D. Grounds 1, 2, and 3 fail because of problems with Amphenol.

1. Amphenol does not qualify as a printed publication.

“Because there are many ways in which a reference may be disseminated to the interested public, ‘public accessibility’ has been called the touchstone in

determining whether a reference constitutes a 'printed publication.'" *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016) (quoting *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986)). "A given reference is 'publicly accessible' upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it." *SRI Int'l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008) (quoting *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006)).

It is Voltage's burden to show that the Amphenol reference, EX1007, was publicly accessible before the September 2014 priority date of the '254 patent. That burden could vary with the nature of the proceeding, as well as the stage. For IPR proceedings at the petition stage, the Precedential Opinions Panel expressly held in *Hulu* that the evidence has to meet the statutory institution standard of "reasonable likelihood" of prevailing:

> [A]t the institution stage, the petition must identify, with particularity, evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent and therefore that there is a reasonable likelihood that it qualifies as a printed publication.

Hulu, LLC v. Sound View Innovations, LLC, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential); 35 U.S.C. § 314(a).

The petition in this case fails to do that; it does not identify evidence sufficient to establish a reasonable likelihood that the Amphenol document labeled EX1007 was publicly accessible before September 2014. Instead, the petition simply states that Amphenol "is prior art under AIA § 102(a) because it was published on November 30, 2012." Pet., 5. The petition points to no evidence to support the "published on November 30, 2012" factual allegation, which is the only fact alleged in support of the legal conclusion that Amphenol "is prior art under AIA § 102(a)." *See Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 772 (Fed. Cir. 2018) (determining "printed publication" status is a question of law based on underlying facts). The "published on November 30, 2012" factual allegation is thus bare attorney argument, which does not suffice as the evidence *Hulu* requires. *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 424 F.3d 1276, 1284 (Fed. Cir. 2005) ("Attorney argument is no substitute for evidence."). Amphenol fails as a prior art reference for this reason alone.

If the Board were inclined to take on the role of archeologist and mine the record for evidence that the petition failed to identify, there are only two potential sources beyond the Amphenol document itself (EX1007): Dr. Kenny's 248-page declaration (EX1003) and a declaration from Voltage's Director of Sales and Business Development, Gary Joseph (EX1024). But "[the] practice of citing a declaration," if the Board were to infer such citation, "to support conclusory

statements that are not otherwise supported in the [p]etition amounts to incorporation by reference." *Cisco Sys., Inc. v. C-CationTechs., LLC*, Case IPR2014–00454, Paper 12 at 10 (PTAB Aug. 29, 2014) (informative). The rules prohibit incorporation by reference, 37 C.F.R. § 42.6(a)(3), so as to "minimize[] the chance that an argument would be overlooked and [to] eliminate[] abuses that arise from incorporation and combination," 77 Fed. Reg. 48,612, 48,617 (Dep't of Commerce Aug. 14, 2012); otherwise the Board would be forced to "play archeologist with the record" for arguments that might have been made outside the parties' briefing, *id.* (citing *DeSilva v. DiLeonardi*, 181 F. 3d 865, 866–67 (7th Cir. 1999)). If anything of substance is found in these declarations, the Board should disregard it as improperly incorporated by reference and decline to find that Amphenol qualifies as a printed publication reference. *See 3M Co. v. Evergreen Adhesives, Inc.*, 860 F. App'x 724, 725–26 (Fed. Cir. 2021) (unpublished) (affirming Board's refusal to consider expert testimony improperly incorporated by reference, and consequent rejection of petitioner's obviousness challenge).

But the evidence is deficient, even if considered. Starting with EX1007 itself, nothing in it suggests it was "disseminated or otherwise made available" to the interested and reasonably diligent pubic. *See SRI Int'l*, 511 F.3d at 1194. The only mention of "November 30, 2012" is found on the left-hand side of the first page of the exhibit, but there is no indication that the document was "published" on

that date or any other. Rather, that date is identified as the "ICS 18-6 Release date." EX1007, 1. There is no evidence on which to base an inference that the phrase "ICS 18-6 Release date" implies publication, but even if there were, that would not be enough without a showing that the distribution included skilled artisans. *SRI Int'l*, 511 F.3d at 1197 ("Unlike the posters hung at a conference in *Klopfenstein*, the Live Traffic paper was not publicized or placed in front of the interested public."). In any case, the document requires a sponsor to authenticate it and to show public availability.

Gary Joseph purports to be that person, but his declaration suffers from a number of problems. First, Mr. Joseph is a current employee of Voltage—***the petitioner***—regarding an issue on which his bias, even if unconscious, likely taints his recollection. EX1024, ¶ 1. Next, Mr. Joseph purports to testify regarding the availability, offers for sale, and advertising of generally described ***products***, *id.*, ¶¶ 4–7, 8, but public availability of the document itself is all that matters in an inter partes review which is statutorily limited to "***patents or printed publications***." 35 U.S.C. § 311(b). The only relevant testimony concerns whether Amphenol qualifies as a printed publication.

On that front, Mr. Joseph provides no specifics or evidence that the document labeled EX1007,[17] the alleged Amphenol refence, was ever "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it." *SRI Int'l*, 511 F.3d at 1194. Instead, he speaks in generalities about "Amphenol's regular practice," and his resulting assumption that EX1007 "would have been publicly available for anyone visiting Amphenol's website to download around or after its Release Date of November 2012," with no evidence to prove that, or how POSAs would have located ***that document*** (or an identical facsimile) using reasonable diligence. EX1024, ¶ 8. Regarding dissemination, Mr. Joseph speaks not of the cited Amphenol reference, but of "a recent or current version of it," which he claims, without elaboration or proof, would have been "available for distribution to potential customers and at business development events in the United States, including trade shows, conferences, and meetings with potential and existing customers." *Id.*, ¶ 9. This assertion accomplishes nothing, as it does not speak to the actual document at issue, nor does it allege facts or cite evidence to

[17] Mr. Joseph does not refer to EX1007, but instead refers to what appears to be an identical document attached as Exhibit A to his declaration, which he calls "the Solar Line Brochure." EX1024, ¶ 2.

support an inference that the customers and conference/tradeshow attendees were POSAs.

Mr. Joseph does not identify whether he is the source for EX1007, or how Voltage found it. It is reasonable to infer from his declaration, however, that it is a recent find, because he states that he "recognizes" it "as a true and accurate copy of the Solar Line Brochure that would have been publicly available around or after its stated Release Date of November 2012." EX1024, ¶ 10. So the provenance of EX1007 itself is unknown, but the basis for Mr. Joseph's "recognition" is even more thin. He compares the alleged Amphenol reference to a different document, one that he ***was*** willing to identify as having come from his files, but circularly cites nothing more than the "ICS-18-2" "Release Date" as proof of that document's date. *Id.* Nor does he explain the significance, if any, of the "ICS" number, or identify any metadata associated with that second document, attached as Exhibit B to his declaration, or otherwise explain how it is "a version" of EX1007. *Id.* A visual comparison of the two only begs the question of how that could be so.

Mr. Joseph's declaration is so general and threadbare that it cannot suffice as evidence of the public accessibility of the Amphenol reference via dissemination or availability to interested and reasonably diligent POSAs. It is at best wishful speculation from a biased petitioner employee witness with no recollection of the actual dissemination or the actual accessibility of EX1007, only of the Amphenol

company's "regular practice" as to documents of that ilk of putting them on the website and handing them out at trade shows. More fundamentally, it fails to even identify the source of the document itself.

Dr. Kenny makes an effort in his declaration to bolster Mr. Joseph's testimony, but it too is unavailing. EX1003, ¶ 66. Citing *archive.org* Amphenol website captures purportedly from 2012 and 2013, he notes catalogs that are not EX1007 and a news item about the company's attendance at a trade show. *Id.* (citing EX1027). Much like Mr. Joseph, Dr. Kenny avoids speaking to the Amphenol document itself. *Id.* His testimony does nothing to suggest it was either accessible or disseminated to the interested public.

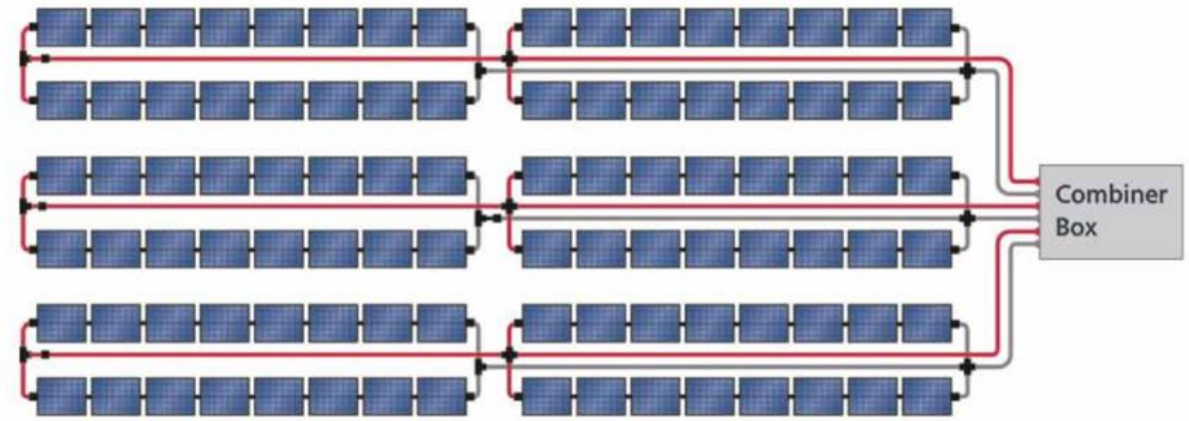
The oblique testimony from Mr. Joseph and Dr. Kenny is not sufficient to establish a reasonable likelihood that the Amphenol reference was publicly accessible before September 2014. The petition therefore fails to show a reasonable likelihood that Amphenol qualifies as a printed publication, so Grounds 1, 2, and 3 fail for that reason alone. *See* EX2001, ¶¶ 51–54.

2. Amphenol does not disclose what Voltage and its unqualified expert say it discloses.

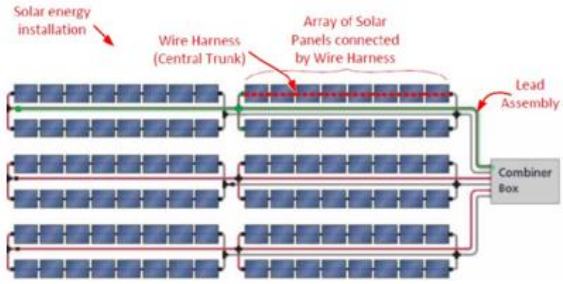
Amphenol does not teach what Dr. Kenny and Voltage propose, so Grounds 1, 2, and 3 fail regardless of whether it qualifies as a printed publication. Specifically, Amphenol does not teach a lead assembly connecting to wire

harnesses to eliminate the need for combiner boxes in utility-scale solar installations, as taught and claimed by the ’254 patent. EX2001, ¶ 55.

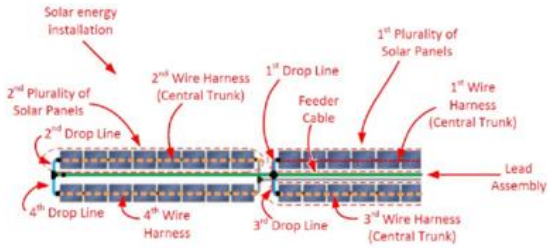
Perhaps the clearest indication of this is the amount of annotation Dr. Kenny had to employ in advocating otherwise. He presents so many different versions of his annotated Amphenol solar array figure as to create the illusion that Amphenol is awash in solar array disclosure. *See* EX1003, ¶¶ 65, 127, 132, 188, 192, 194, 200, 202, 206, 301. In reality, there is just one depiction of a solar array in Amphenol, and it is just an unadorned, stylized illustration. EX1007, 5. It is not a photograph of something that actually existed, nor does it have any of the labeling applied by Dr. Kenny and employing the terminology of the ’254 patent. Those terms—like “wire harness,” “drop line,” “central trunk,” “feeder cable,” and “lead assembly”—appear nowhere in Amphenol. More importantly, as explained below, nothing in Amphenol teaches or suggests interconnecting these structures in the ways claimed in the ’254 patent. To illustrate the magnitude of Dr. Kenny’s advocacy, the images below compare the unaltered graphic from Amphenol (top row) with the four types of annotations Dr. Kenny uses in his declaration (middle and bottom rows).



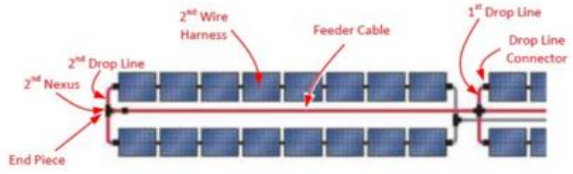
EX1007, p. 6 (1007-5)



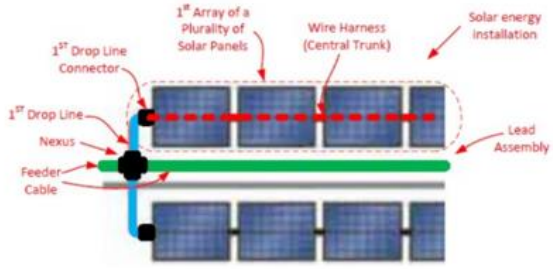
EX1003, ¶¶ 65, 127, 188



EX1003, ¶¶ 132, 192, 200, 301



EX1003, ¶¶ 202, 206



EX1003, ¶ 194

In pressing his argument, Dr. Kenny conflates the ***wire harness*** with ***intra-module wiring***. EX2001, ¶ 56. What Dr. Kenny labels as a lead assembly is, in fact, a wire harness and what he labels a wire harness is some form of intra-module wiring. *Id.*, ¶ 60.

The "wire harness" of the '254 patent includes a "central trunk" and "a plurality of branches," where each of the plurality of branches is electrically connected to a separate solar panel contained in an array of a plurality of solar panels. *Id.*; EX1001, 4:30–39. Figure 4 (shown below) is instructive.[18]

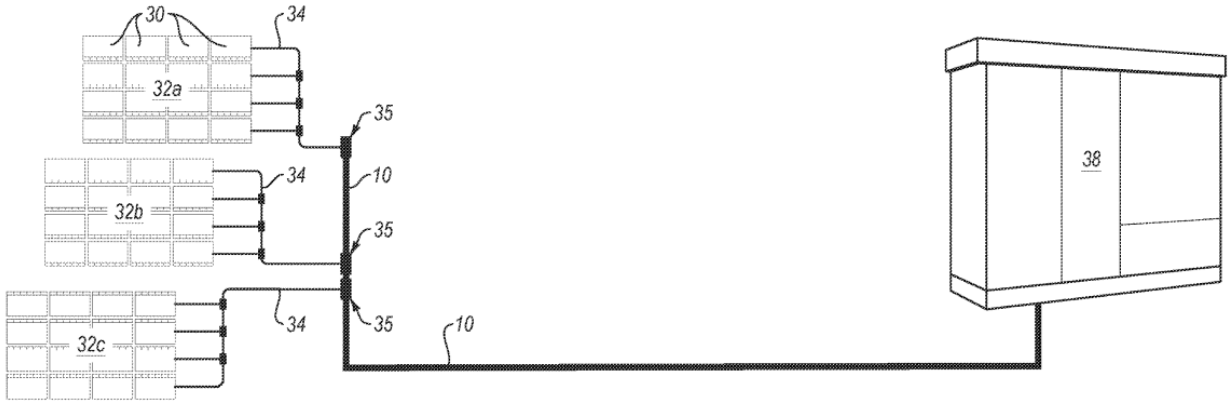
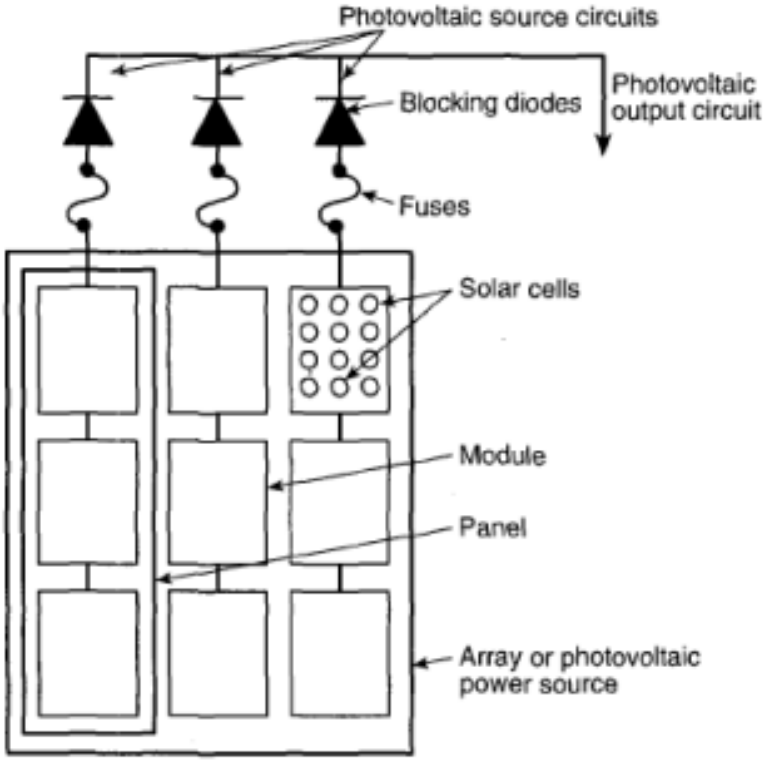


FIG. 4

EX1020, Fig. 4; EX1001, Fig. 4. In Figure 4, each solar wire harness 34 includes, as an example, four branches that each connect to the output of a separate solar panel (formed from a row of modules 30). In this way, each wire harness 34 groups the outputs of four solar panels, which each form a separate solar array (32a, 32b, and 32c, respectively). EX2001, ¶ 56.

[18] The patent figures in this section VI.D.2 are from the continuation '153 patent. See note 7 above for explanation.

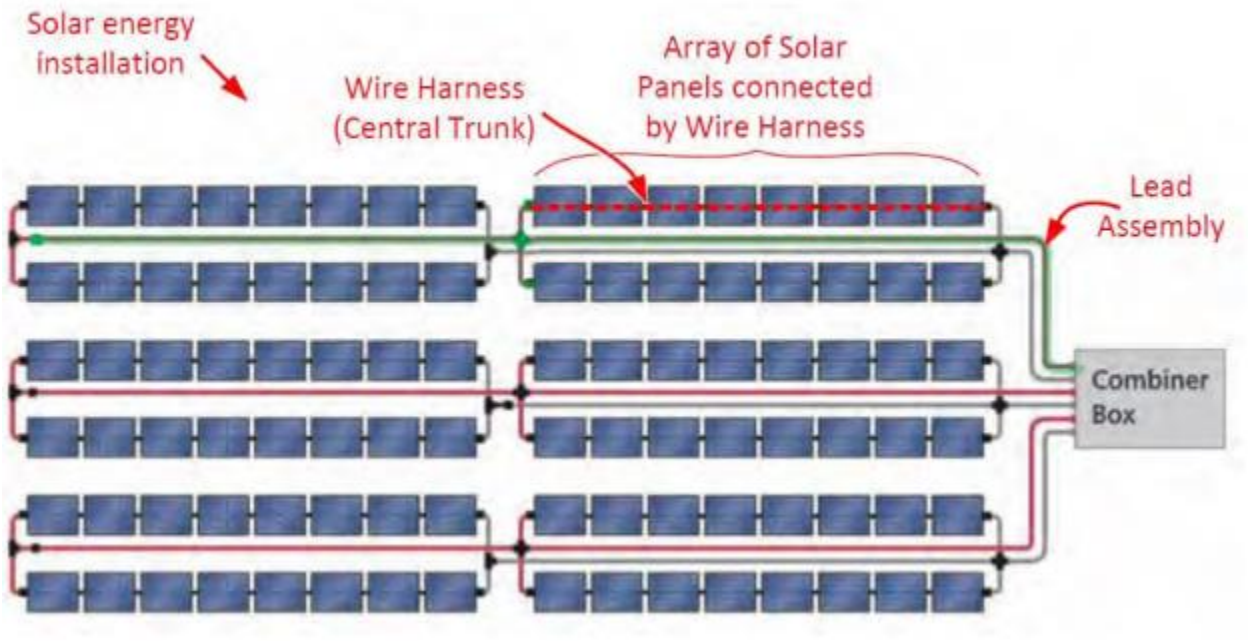
Intra-module wiring is different. The concept is illustrated in Article 690 of the 2002 version of the NEC section that Dr. Kennedy relies on. (section 690) cited by Dr. Kenny. EX1003, ¶ 68 (citing EX1010).



EX1010, Figure 690.1(A). The figure above shows three columns, each having three solar modules, with each column forming a single solar panel. The lines between solar modules indicate electrical connections or intra-module wiring between the solar modules. What is not shown in Figure 690.1(A) is a wire harness, *i.e.*, individual branches each connecting to an output of one of the solar panels (of which there are three in the figure) and grouping those outputs at a

central trunk. A wire harness is not the same as intra-module wiring; the scale and purpose are entirely different. EX2001, ¶ 57.

Dr. Kenny uses the following annotated image to argue that Amphenol teaches a "Wire Harness (Central Trunk)," a "Lead Assembly," and an "Array of Solar Panels connected by Wire Harness," as labeled:



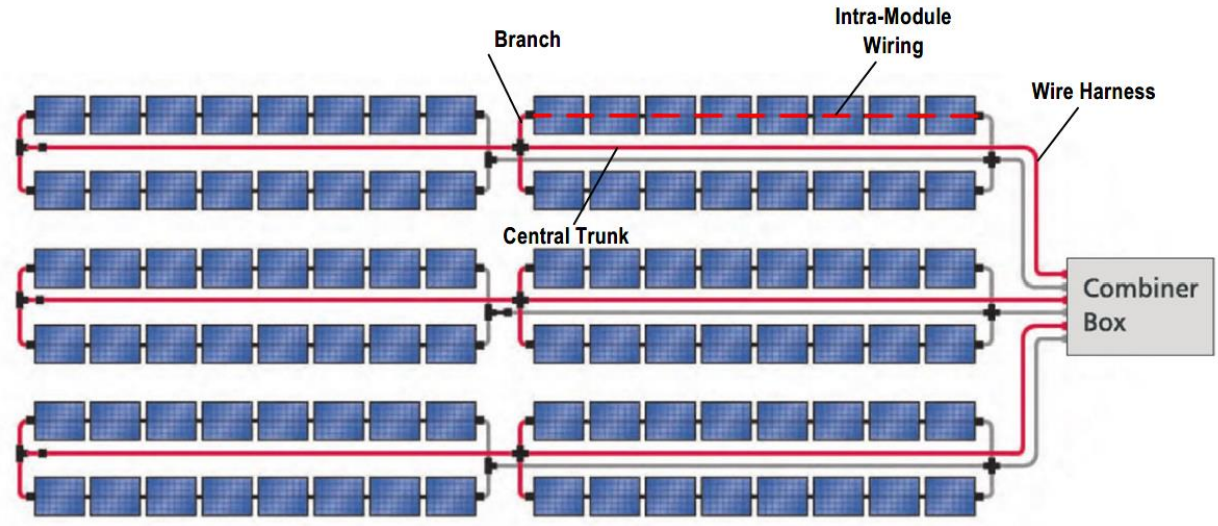
EX1003, ¶¶ 65, 127, 188. Dr. Kenny includes a red dotted line between the solar modules shown in the Amphenol brochure and declares that the red dotted line shows the existence of a wire harness. Not so. EX2001, ¶ 58.

First, nothing in Amphenol indicates what sort of wiring connects the solar modules in each row. Indeed, there are many wiring techniques between modules that can be employed such as, for example, stringing modules together with wiring from individual junction boxes, skip-stringing, and parallel wiring. EX2001, ¶ 59.

However, these wiring techniques have nothing to do with a wire harness. Regardless of the wiring used to electrically connect various solar modules together, at the end of each row of solar modules is an output—positive and negative—which will be connected to, for example, a branch of a wire harness. This is clearly the case in Amphenol. As shown in the figure above, each solar panel (row of solar modules) has an output that is connected to a branch corresponding to the green line in Dr. Kenny's annotation. However, what he has labeled a "lead assembly" is actually just a wire harness, like the wire harness 34 in Figure 4 of the '254 patent and the wire harness in independent claims 7 and 14 of the '254 patent. EX2001, ¶ 59.

That the green lines in the above-annotated figure in Amphenol is a wire harness is also evident based on what the central trunk of the wire harness is connected to—***a combiner box***. Again, the purpose of the lead assembly claimed in the '254 patent is to ***eliminate*** the need for a combiner box. If the green line were truly a lead assembly, its central trunk would connect directly to an inverter rather than a combiner box, as shown, for example, in Figure 4 of the '254 patent. EX1001, Fig. 4. It does not, however, because what Voltage labels a lead assembly is, instead, a wire harness. What it labels a wire harness is some form of intra-module wiring. EX2001, ¶ 60.

Amphenol teaches a common architectural layout of a utility-scale solar power installation prior to the invention of the lead assembly claimed in the ’254 patent. EX2001, ¶ 61. The properly annotated layout of the figure in Amphenol is as follows:



EX1007, 5 (Weiner annotations); EX2001, ¶ 61. Indeed, this architectural layout is consistent with the layout described in the ’254 patent as prior art shown, for example, in Figure 2 below:

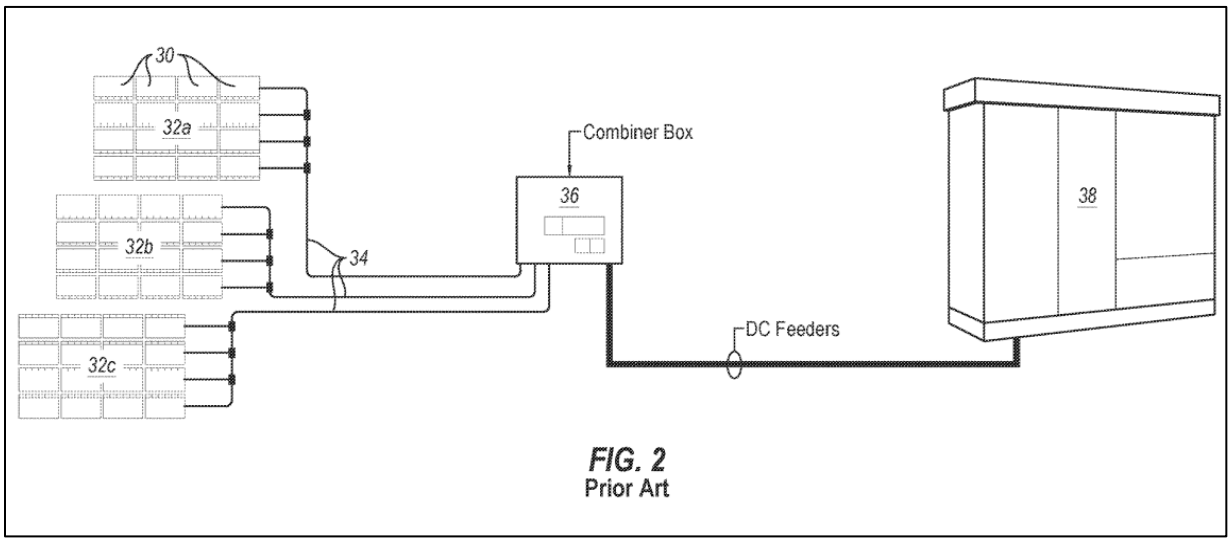


FIG. 2
Prior Art

EX1001, Fig. 2; EX2001, ¶ 61. Figure 2, like Amphenol, illustrates rows of solar modules (30) wired together to form solar panels. The outputs of those solar panels are individually connected to respective branches of the wire harnesses (34) and the power from each solar panel is grouped at the central trunk of the wire harness (34). Figure 2 shows three wire harnesses (34) whose power is consolidated at a combiner box (36), just like the figure in Amphenol. EX2001, ¶ 61.

Amphenol does not teach what Voltage contends. Amphenol does not include any information whatsoever about the intra-module wiring electrically connecting the solar modules together and Dr. Kenny, upon whom Voltage relies, does not remedy that deficiency by relying on any other materials or expertise in the field. Regardless, intra-module wiring is ***not*** a wire harness. EX2001, ¶ 62.

What Dr. Kenny indicates is a lead assembly in Amphenol is, in fact, a wire harness, as defined by the ’254 patent. Therefore, Amphenol does not teach or suggest the “lead assembly” structure required by every claim of the ’254 patent. As a consequence, Amphenol also fails to disclose the parts that make up the lead assembly, including, for example, “a feeder cable,” “drop line,” “nexus,” “apertures,” “undermold,” and “overmold.” And none of the references combined with Amphenol remedies that deficiency. As such, Grounds 1, 2, and 3 fail to show each of the elements of the challenged claims is either expressly or impliedly

taught by Amphenol in view of Shao, Yamawaki, Tamura, and/or Yu. EX2001, ¶ 62.

E. Grounds 1, 2, and 4 fail because of Shao is not analogous art.

Not only must obviousness be assessed from the perspective of a POSA, but it must also be assessed from the perspective of prior art that is analogous to the field of the subject patent. The purpose of the analogous art test for obviousness is to examine whether a reference can be considered as prior art to the challenged patent in the first place. *Sanofi-Aventis*, 66 F.4th at 1377; *see also In re Wood*, 599 F.2d 1032, 1036 (C.C.P.A. 1979) ("[t]he rationale behind this rule precluding rejections based on combination of teachings of references from nonanalogous arts is the realization that an inventor could not possibly be aware of every teaching in every art.") "Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved." *In re Clay*, 966 F.2d 656, 658–59 (Fed. Cir. 1992). Further, "whether prior art is analogous is determined with the foresight of a person of ordinary skill, not with the hindsight of the inventor's successful achievement." *Netflix, Inc. v. DivX, LLC*, 80 F.4th 1352, 1358 (Fed. Cir. 2023) (citations omitted). Because the Shao reference is from a different field of

endeavor than the ’254 patent and is not pertinent to the problem addressed by the inventor of the ’254 patent, it is not analogous art and should not be considered as prior art to the ’254 patent. Grounds 1, 2, and 4 therefore fail.

1. The Shao reference and the ’254 patent are in different fields of endeavor.

Voltage argues in the petition that the field of endeavor for the ’254 patent is simply “electrical wiring assemblies and connectors,” Pet., 12, 46, 49, without regard to use in solar power installations as required by every claim, EX1001, cl. 1 (“a lead assembly for use in a solar energy installation”), cl. 7 (“a solar power system”), cl. 14 (“a method of constructing a solar power installation”). Dr. Kenny parrots the same view in his declaration, EX1003, ¶ 377, but he had a different take a few months earlier when testifying at the ITC hearing. That proceeding was focused on the ’153 patent, but since it is a continuation of the ’254 patent, the two patents are indisputably from the same field of endeavor. Dr. Kenny testified at the ITC that the field is “solar energy installation, solar power system, and methods of constructing a solar power installation” or “methods and apparatus for a lead assembly for use in a solar energy … installation -- solar power systems and a method of constructing a solar power installation.” EX2003, 1230:1–24. That testimony aligned with Mr. Weiner’s testimony in the same proceeding that the field of endeavor is utility-scale solar power installations. *Id.*, 1260:2–1261:17, 1264:2–5, 1284:23–1285:3.

Dr. Kenny had it right the first time, when delivering live testimony without the benefit of time to carefully craft an answer that best serves a desired end goal. That he has now dropped the solar component from his previous belief can only be explained by his and Voltage's need to shoehorn Shao into the same field of endeavor as the '254 patent.

The '254 patent is clearly centered around solar installations. Indeed, the specification and claims are replete with the references to solar and solar installations including the title, abstract, figure descriptions, figures, and claims. Indeed, the independent claims recite many elements directed to solar installations specifically, including, in claim 1, "[a] lead assembly for use in ***a solar energy installation***" in which "said lead assembly combines power from a plurality of solar arrays and transmits that power to an inverter in ***a solar energy installation*** lacking a combiner box," and, in claims 7 and 14, respectively, "***[a] solar power system***" and "***a solar power installation***," each having "a first solar array" and "second solar array," each solar array comprised of a plurality of "solar panels." EX1001, claims 1, 7, 14. As such, it would be inaccurate to omit any reference to solar installations or solar power systems in the field of endeavor of the '254 patent. EX2001, ¶ 64. The field of endeavor is thus best characterized as solar energy installations or solar power systems, as Dr. Kenny previously testified before the ITC. EX2003, 1230:1–24; EX2001, ¶ 65.

Shao, in contrast, has nothing to do with solar applications, as Dr. Kenny agreed at the ITC hearing: "[t]here's no mention of solar technology in the Shao patent." EX2003, 1202:21–23. Mr. Weiner testified to the same effect: "[t]he word 'solar' doesn't show up once – nowhere." EX2003, 1285:4–5, 1283:11–14; EX2001, ¶ 66. The failure to mention "solar" is a very strong indicator that Shao is not from the same field of endeavor as the '254 patent. *See Airbus S.A.S. v. Firepass Corp.*, 941 F.3d 1374, 1380 (Fed. Cir. 2019) (reference having no mention of "fire" not in same field of endeavor as challenged claims directed to fire prevention and suppression system).

Shao discloses a device intended specifically for AC power distribution within a multistory building (*e.g.*, vertically between floors of a building). EX1008, 1; EX2001, ¶ 68. As noted above, the '254 patent teaches solar power systems that collect and distribute DC power and can only do so in an outdoor setting. So there are two things about Shao that a POSA would have found significant, and disqualifying. First is the fact that wiring for AC systems typically has a weaker rating than the ratings required for a DC power system. EX2001, ¶ 69. Thus, one skilled in the art would not look to a device in a weaker-rated AC context and determine that the device has an application in the DC design context. It may be the case that a skilled artisan would look to a DC device for application in an AC design, but the reverse is not true. Therefore, one of skill in the art would

not look to Shao (an AC device) and use it in the context of solar power installations of the type described by the ’254 patent (DC context). EX2001, ¶ 69. Second, Shao is intended for AC power distribution within a building. This is in sharp contrast to solar components which are intended for outdoor use and subject to sometimes extreme environmental conditions. And, while Shao indicates that its design is moisture resistant (EX1004, 5), the type of moisture encountered by an indoor device, like Shao, is radically different from the moisture or water exposure that outdoor devices, like those described by the ’254 patent, would be designed to endure. EX2001, ¶ 70.

The ’254 patent and Shao are not analogous, at least under the field of endeavor test. *Id.*, ¶ 71.

2. The ’254 patent and the Shao reference are directed to different problems.

If not from the same field of endeavor, a prior art reference might still qualify as analogous if it is reasonably pertinent to the problem with which the inventor is involved. *Clay*, 966 F.2d at 659. However, the Shao reference and the ’254 patent are directed to entirely different problems.

Voltage and Dr. Kenny make no overt effort to address the “reasonably pertinent” question. They instead speak only to Shao addressing the same general problem as ***Yamawaki***, with no mention of the problem addressed by ***the ’254 patent***. Pet., 71; EX1003, ¶ 381. Yamawaki’s “problem” is irrelevant; the relevant

question for determining whether art is analogous is the "***particular problem*** with which ***the inventor*** is involved." *Clay*, 966 F.2d at 659.

The '254 patent actually states the problem being solved: "there is a need for a device that renders a combiner box unnecessary." EX1001, 1:50–51. Voltage ignores this fact and, consequently, fails to identify any "reasonably pertinent" problem addressed in Shao. Ultimately the '254 patent is focused on how to get power from solar panel arrays all the way over to an inverter without using a combiner box. EX2001, ¶ 72. Shao focuses on enabling single-branch joints by combining them into a double-branch AC power distribution system between floors of a building. *Id.* It is trying to reduce the number of joints and create a more compact structure that is tighter inside of a building. *Id.* These are two different problems. *Id.*

* * * * * * *

The evidence does not show that Shao is analogous art to the '254 patent. Specifically, there is no evidence that (1) Shao is from the same field of endeavor as the'254 patent, or that (2) Shao is reasonably pertinent to the particular problem with which the inventor of the '254 patent was involved. *Clay*, 966 F.2d at 658–59. In contrast, Shoals has provided expert testimony demonstrating that Shao is not analogous. On this record, the Board should find that Shao and the '254 patent are

not analogous and that Shao therefore does not qualify as available prior art to the ’254 patent.

Notably, Dr. Kenny does not do much to explain why a POSA would have considered an indoor AC power distribution system analogous to an outdoor DC power collection system, except to proclaim that “electrons are electrons.” EX1003, ¶ 87. By this logic, “protons are protons” and “neutrons are neutrons,” so “atoms are atoms” and everything is analogous because everything is made of atoms. This is not a defensible position, nor is “electrons are electrons.”

Unlike Dr. Kenny, Mr. Weiner’s testimony at the ITC hearing on these points is no different than it is here. EX2003, 1282:22–1283, 1284:2–22, 1283:22–24. And his conclusion is the same as well—Shao and the ’254 patent are not analogous. EX2003, 1284:2–5, 1285:8–17; EX2001, ¶¶ 71, 73.

VII. CONCLUSION

The petition fails to show a reasonable likelihood that the challenged claims are unpatentable as obvious in view of the cited art and, therefore, the Board should deny institution.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

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