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Paper 9
Date: March 13, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OBM, INC. & CHOLLA ENERGY LLC,
Petitioner,

v.

LANCIUM LLC,
Patent Owner.

IPR2023-01407
Patent 10,608,433 B1

Before CARL W. WHITEHEAD JR., AMBER L. HAGY, and KARA L. SZPONDOWSKI, *Administrative Patent Judges.*

HAGY, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background and Summary

OBM, Inc. and Cholla Energy LLC (collectively, "Petitioner") filed a petition requesting *inter partes* review (Paper 1, "Pet.") of claims 1–20 ("the challenged claims") of U.S. Patent No. 10,608,433 B1 (Ex. 1001, the "'433 patent"). *See* 35 U.S.C. § 311. Lancium LLC ("Patent Owner") timely filed a Preliminary Response. Paper 8, "Prelim. Resp."

Under 37 C.F.R. § 42.4(a), we have authority to determine whether to institute review. The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary Response shows "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

Applying those standards, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing unpatentability of at least one challenged claim of the '433 patent. Accordingly, we do not institute *inter partes* review.

B. Real Parties in Interest

Petitioner identifies OBM, Inc., and Cholla Energy LLC as the real parties in interest. Pet. 1.

Patent Owner identifies itself the real party in interest. Paper 5, 1.

C. Related Matters

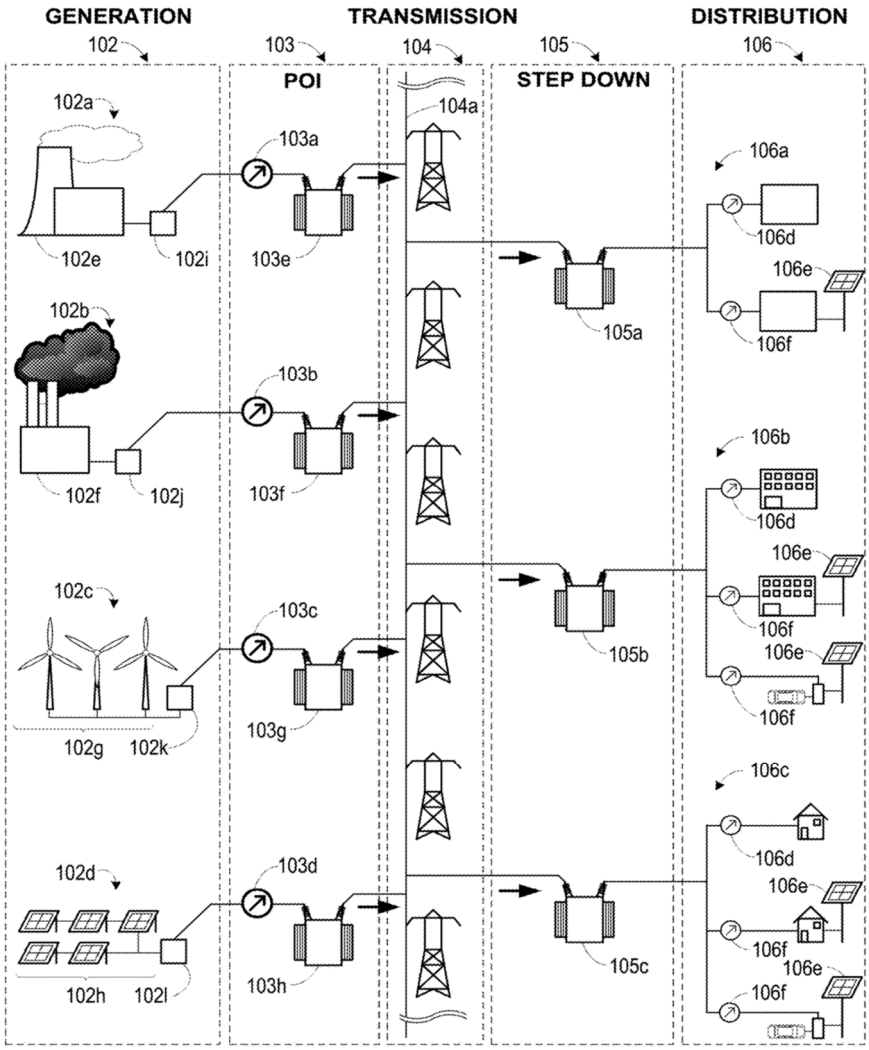
As required by 37 C.F.R. § 42.8(b)(2), Petitioner identifies the following district court proceeding: *OBM, Inc. v. Lancium LLC*, 4:23-cv-01798 (S.D. Tex.). Pet. 1. Petitioner represents that in this litigation, "OBM

is seeking a declaratory judgment that it does not infringe the '433 Patent" and "[a]t present, invalidity of the '433 Patent is not at issue." *Id*. Patent Owner represents that this litigation was dismissed with prejudice on September 14, 2023. Paper 5, 1. Patent Owner additionally identifies the following district court proceeding involving the '433 patent, which may affect, or be affected by, a decision in this proceeding: *Lancium LLC v. U.S. Data Mining Group, Inc. et al*., 6-23-cv-00344 (W.D. Tex.). *Id*.

D. The '433 patent (Ex. 1001)

The '433 patent, titled "Methods and Systems for Adjusting Power Consumption Based on a Fixed-Duration Power Option Agreement," issued on March 31, 2020. Ex. 1001, codes (45), (54). The '433 patent claims priority to provisional application No. 62/927,119, filed October 28, 2019. *Id.* at code (60).

The '433 patent relates to "power consumption adjustments when using grid power and/or intermittent behind-the-meter power." *Id*. at 1:16–18. According to the '433 patent, an electrical grid includes: "(i) generation stations that produce electrical power at large scales for delivery through the grid, (ii) high voltage transmission lines that carry that power from the generation stations to demand centers, and (iii) distribution networks carry that power to individual customers." *Id.* at 1:28–33. Figure 1 of the '433 patent, reproduced below, "illustrates a typical electrical grid." *Id.* at 1:34.



PRIOR ART
FIGURE 1

Figure 1 is a diagram depicting "a typical electrical grid." Ex. 1001, 7:9.

As shown in Figure 1, generation segment 102 includes one or more generation stations that produce utility-scale electricity (typically >50 MW), such as nuclear plant 102a, coal plant 102b, wind power station (i.e., wind farm) 102c, and/or photovoltaic power station (i.e., a solar farm) 102d. Ex. 1001, 1:39–43. The '433 patent describes that "electrical power generated at generation stations 102a–d passes through a respective Point of

Interconnection ('POI') 103 between a generation station (e.g., 102a–d) and the rest of the grid." *Id.* at 2:29–33. According to the '433 patent, "[a] key aspect of the POI 103 is that this is where generation-side metering occurs." *Id.* at 2:51–52.

After passing through the utility-scale generation-side meters in POI 103, the power originally generated at generation stations 102a–d is transmitted onto and along transmission lines 104a in transmission segment 104. *Id.* at 3:22–25. Once the energy has been transmitted along transmission segment 104, in distribution segment 106, distribution networks 106a–c take power that has been stepped down from transmission lines 104a and distribute it to local customers. *Id.* at 3:44–46.

According to the '433 patent, "[t]o maintain stability of the grid, the grid operator strives to maintain a balance between the amount of power entering the grid from generation stations (e.g., 102a–d) and the amount of grid power used by loads (e.g., customers in the distribution segment 106)." *Id.* at 4:9–13. The '433 patent describes situations where "generation stations are sometimes forced to either sell power to the grid at the much lower prices or adjust operations to decrease the amount of power generated." *Id.* at 7:66–8:1. The '433 patent describes embodiments that "aim to assist generation stations in managing power generation operations and avoid unfavorable power pricing situations like those described above." *Id.* at 8:20–23. "In particular, example embodiments may involve providing a load that is positioned behind-the-meter ('BTM') and enabling the load to utilize power received behind-the-meter at a generation station in a timely manner." *Id.* at 8:23–27.

Figure 2 of the ’433 patent, reproduced below, depicts “a behind-the-meter arrangement with optional grid-power.” *Id.* at 13:44–46.

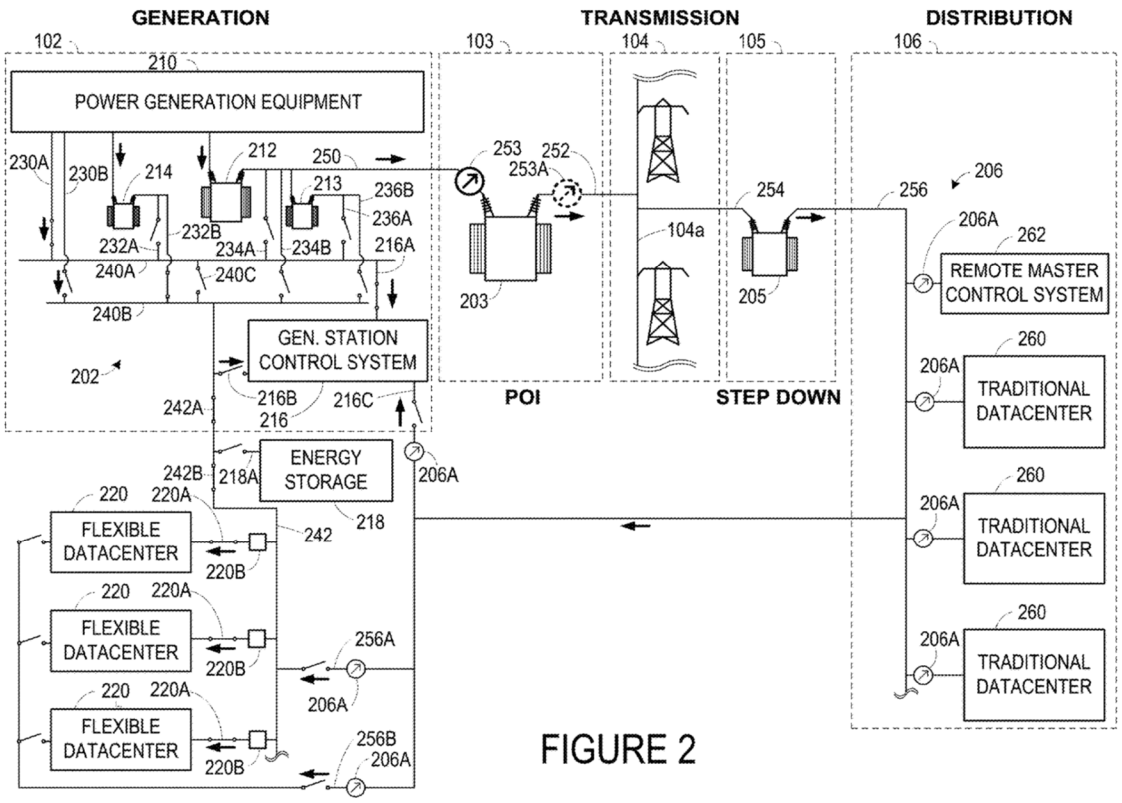


FIGURE 2

Figure 2 is a diagram depicting “a behind-the-meter arrangement with optional grid power, including one or more flexible datacenters, according to one or more example embodiments.” Ex. 1001, 7:10–12.

As shown in Figure 2, “generation station 202 is configured to connect with BTM equipment,” such as “flexible datacenters 220,” “which may function as BTM loads.” *Id.* at 14:29–32. For example, “flexible datacenters 220 may be considered BTM equipment located behind-the-meter and electrically connected to the power generation equipment 210 behind (i.e., prior to) the generation station’s POI 103 with the rest of the electrical grid.” *Id.* at 16:37–41. According to the ’433 patent, “the generation station 202 may selectively provide power to the BTM loads

and/or the grid based on economic and power availability considerations." *Id.* at 22:33–36.

In addition, remote master control system 262 "may be capable of directing one or more flexible datacenters 220 to ramp-up or ramp-down to desired power consumption levels, and/or to control cooperative action of multiple flexible datacenters by determining how to power each individual flexible datacenter 220 in accordance with operational directives." *Id.* at 22:46–51. "The remote master control system 262 may also communicate with grid operators and/or an operator of generation station 202 to help determine power management strategies when distributing computational operations across the various datacenters." *Id.* at 23:35–39.

Figure 11 of the '433 patent, reproduced below, is "a block diagram of a system for implementing control strategies based on a power option agreement." *Id.* at 43:36–38.

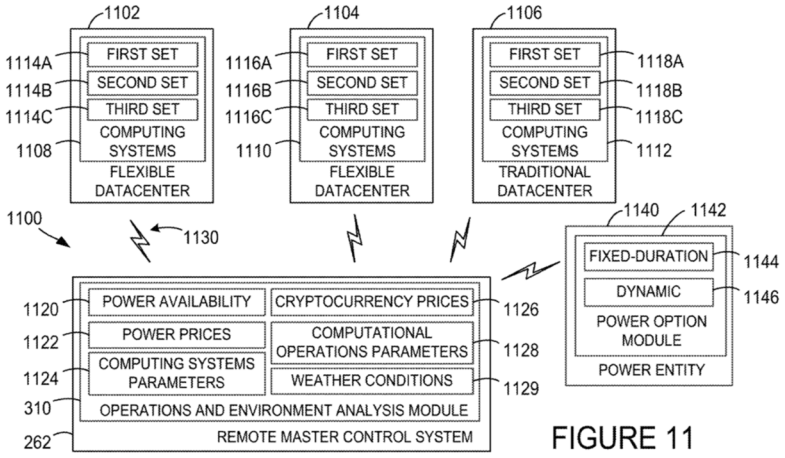


FIGURE 11

Figure 11 is a block diagram depicting "a system for implementing power consumption adjustments based on a power option agreement, according to one or more embodiments." Ex. 1001, 7:38–40.

Figure 11 shows system 110 including "a control system (e.g., the remote master control system 262), a load (e.g., one or more of the

datacenters 1102, 1104, and 1106), and a power entity 1140, which may establish and operate in accordance with a power option agreement." *Id.* at 43:38–44. According to the '433 patent:

> In general, a power option agreement is an agreement between a power entity 1140 associated with the delivery of power to a load (e.g., a grid operator, power generation station, or local control station) and the load (e.g., the datacenters 1102–1106). As part of the power option agreement, the load (e.g., load operator, contracting agent for the load, semi-automated control system associated with the load, and/or automated control system associated with the load) provides the power entity 1140 with the right, but not obligation, to reduce the amount of power delivered (e.g., grid power) to the load up to an agreed amount of power during an agreed upon time interval. In order to provide the power entity 1140 with this option, the load needs to be using at least the amount of power subject to the option (e.g., a minimum power threshold).

Id. at 43:46–60. "The power option agreement may be used by the power entity 1140 to reserve the right to reduce the amount of grid power delivered to the load during a set time frame (e.g., the next 24 hours)." *Id.* at 44:3–6; *see also id*. at 44:17–35 (describing an example of a power option agreement specifying that a load is required to use at least 10 MW or more at all times during the next 12 hours).

Figure 12, below, depicts "a graph representing power option data based on a power option agreement." *Id.* at 50:53–55.

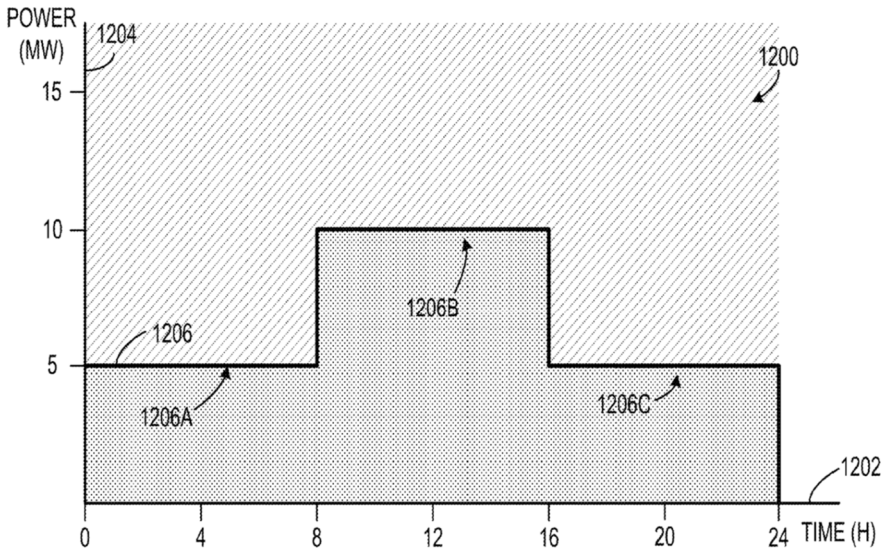


FIGURE 12

Figure 12 is a graph representing "power option data based on a power option agreement, according to one or more embodiments." Ex. 1001, 7:41–43.

As shown in Figure 12, "[t]he graph line 1206 represents sets of minimum power thresholds 1206A, 1206B, 1206C that are specified by power option data based on the power option agreement." *Id.* at 50:66–51:1. According to the '433 patent, "the power quantities above the graph line 1206 represents power levels that the load(s) may consume from the power grid during the 24 hour duration that would satisfy the requirements (i.e., the minimum power thresholds 1206A–1206C) set forth by the power option agreement." *Id.* at 51:12–17. For example, during the time interval from hour 0 to hour 8, the minimum power threshold 1206A is set at 5 MW as shown in Figure 12. *Id.* at 51:24–28. The '433 patent explains the reason for the minimum power threshold:

> Thus, based on the power option data shown in FIG. 12, the loads must be able to operate at a target power consumption

> level that is equal to or greater than the 5 MW minimum power threshold 1206A at all times during the time interval extending from hour 0 to hour 8, in order to be able to satisfy the power option if it is exercised for that time interval. Similarly, the power entity could reduce the power consumed by loads by any amount up to 5 MW at any point during the time interval from hour 0 to hour 8 in accordance with the power option agreement.

Id. at 51:28–37.

E. Illustrative Claims

Of the challenged claims, claims 1, 17, and 20 are independent. Challenged claims 2–16 depend, directly or indirectly, from claim 1, and challenged claims 18 and 19 depend from claim 17. Claim 1, reproduced below, illustrates the claimed subject matter[1]:

> 1. [1.0] A system comprising:
>
> [1.1] a set of computing systems, wherein the set of computing systems is configured to perform computational operations using power from a power grid;
>
> [1.2.0] a control system configured to:
>
> monitor a set of conditions;
>
> [1.2.1] receive power option data based, at least in part, on a power option agreement,
>
> [1.2.2] wherein the power option data specify: (i) a set of minimum power thresholds, and (ii) a set of time intervals, wherein each minimum power threshold in the set of minimum power thresholds is associated with a time interval in the set of time intervals;
>
> [1.2.3] responsive to receiving the power option data,

[1] Bracketed reference numbers and letters have been added to correspond to Petitioner's labeling of claim limitations in Petitioner's Claim Listing. Pet. viii–xiii.

> determine a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals,
>
> [1.2.4] wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval; and
>
> [1.2.5] provide instructions to the set of computing systems to perform one or more computational operations based on the performance strategy.

Ex. 1001, 59:2–28. Independent claims 17 and 20, directed to a method and to a non-transitory computer readable medium, respectively, contain commensurate limitations. *Id.* at 61:1–22, 62:12–36.

F. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–20 are unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	References/Basis
1–12, 17, 19, 20	103(a)	Montalvo,[2] APC-Tariff[3]
13–15	103(a)	Montalvo, APC-Tariff, Day[4]

[2] U.S. Patent Pub. No. 2010/0088261 A1, published Apr. 8, 2010 (Ex. 1004, "Montalvo").

[3] Virginia S.C.C. Tariff No. 25, Appalachian Power Company, Standard Rate Schedules Terms and Conditions of Standard Service Governing Sale of Electricity in Virginia (labeled "Effective: January 25, 2015") (Ex. 1005, "APC-Tariff").

[4] U.S. Patent Pub. No. 2016/0329708 A1, published Nov. 10, 2016 (Ex. 1006, "Day").

Claims Challenged	35 U.S.C. §	References/Basis
16, 18	103(a)	Montalvo, APC-Tariff, Sowell[5]

As further support, Petitioner offers the Declaration of Andres E. Carvallo. Ex. 1003.[6] In support of the Preliminary Response, Patent Owner offers the Declaration of Dr. Zygmunt J. Haas. Ex. 2001.

II. ANALYSIS

A. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, "would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.[7] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

[5] U.S. Patent Pub. No. 2019/0318327 A1, published Oct. 17, 2019 (Ex. 1007, "Sowell").

[6] References herein to "Ex. 1003" are to the "Corrected" version entered into the record, with Board authorization, on December 13, 2023, to include Appendix A (Mr. Carvallo's CV), which Petitioner inadvertently omitted from the original Exhibit 1003 filed on September 13, 2023.

[7] Neither party presents arguments or evidence of secondary considerations.

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

B. Level of Ordinary Skill in the Art

The level of skill in the art is a factual determination that provides a primary guarantee of objectivity in an obviousness analysis. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999) (citing *Graham*, 383 U.S. at 17–18; *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991)).

Relying on the declaration testimony of Mr. Carvallo, Petitioner asserts that a person of skill in the art "at the time of the claimed invention would have a degree in mechanical engineering, electrical engineering, or a similar field with at least 2 years of experience with power generation systems or other comparable hands-on experience." Pet. 11 (citing Ex. 1003 ¶ 13).

Patent Owner proposes an alternative definition, asserting that a person of ordinary skill in the art "at the time of the claimed invention would have had a degree in mechanical engineering, electrical engineering, or a similar field with at least 1–2 years of experience with power control systems or other comparable professional experience." Prelim. Resp. 26

(citing Ex. 2001 ¶ 32). Patent Owner disagrees with Petitioner's proposed definition because "the Challenged Claims pertain to power control systems instead of 'power generation systems,' as asserted in the Petition." *Id*. at 25 (citing Pet. 11).

Based on the present record including the disclosure in the '433 patent, we apply Petitioner's definition of the level of ordinary skill in the art. *See* Pet. 11. We determine this level of skill comports with the qualifications a person would have needed to understand and implement the teachings of the '433 patent and the prior art of record. *Cf. Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (noting that the prior art itself may reflect an appropriate level of skill in the art). We also note that our decision herein would be the same under either party's proposed definition.

C. Claim Construction

In interpreting the claims of the '433 patent, we "us[e] the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. [§] 282(b)." *See* 37 C.F.R. § 42.100(b) (2021). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as would have been understood by one of ordinary skill in the art in light of the written description and the prosecution history pertaining to the patent. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc).

Petitioner notes that the district court construed certain terms of the '433 patent in *Bearbox LLC v. Lancium LLC*, 1:21-cv-00534-GBW-CJB (D. Del.). Pet. 11. In particular, the district court construed "power option agreement" as follows:

> an agreement between a power entity associated with the delivery of power to a load and the load, wherein the load provides the power entity with the option to reduce the amount of power delivered to the load up to an agreed amount of power during an agreed upon time interval such that the load must use at least the amount of power subject to the option during the time interval unless the power entity exercises the option.

See id. (quoting Ex. 1008, 1). The district court also construed "minimum power threshold" as "a minimum amount of power a load must use during an associated time interval." *Id.* (quoting Ex. 1008, 1).

Petitioner states that "[f]or this proceeding only, Petitioner[] do[es] not contest these constructions." *Id.* Patent Owner also states that it does not contest these constructions at this stage. Prelim. Resp. 26.

For purposes of this decision, we adopt these constructions. We otherwise determine that no explicit construction of any other terms is needed to resolve the issues presented by the arguments and evidence of record. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Overview of Cited References

1. Montalvo (Ex. 1004)

Montalvo is a U.S. Patent Application titled "Method and System for Fully Automated Energy Curtailment," published on April 8, 2010. Ex. 1004, codes (43), (54). Petitioner asserts that Montalvo is prior art under at least 35 U.S.C. § 102(a)(1)–(2). Pet. 7. Patent Owner does not, at this

stage, challenge the status of Montalvo as prior art. *See* Prelim. Resp. 10–18.

According to Montalvo, "Independent Service Operators ('ISOs') and/or their affiliates, which include Energy Curtailment Service Providers ('ECSPs'), utility companies, electrical power producers . . . , are under continuing pressure to reduce demand for electrical power ('kilowatt ("KW") demand') by customers ('end users')." Ex. 1004 ¶ 2. Montalvo describes a system and method that "implements, upon the occurrence of a demand response event ('DR event'), fully automated demand response to reduce KW demand at end users who are supplied electricity over an electrical power grid." *Id*. ¶ 41. According to Montalvo:

> The end users have entered into demand response agreements ("DR Agreements") with ISOs, ECSPS and/or utility companies, who provide for the supply of electricity to the end users, to reduce KW demand for DR event(s), where demand reduction actions are automatically implemented at the end users without human involvement, in accordance with the terms of the DR Agreements and to minimize undesired impact at the end users.

Id. Figure 1 of Montalvo is reproduced below.

FIG. 1

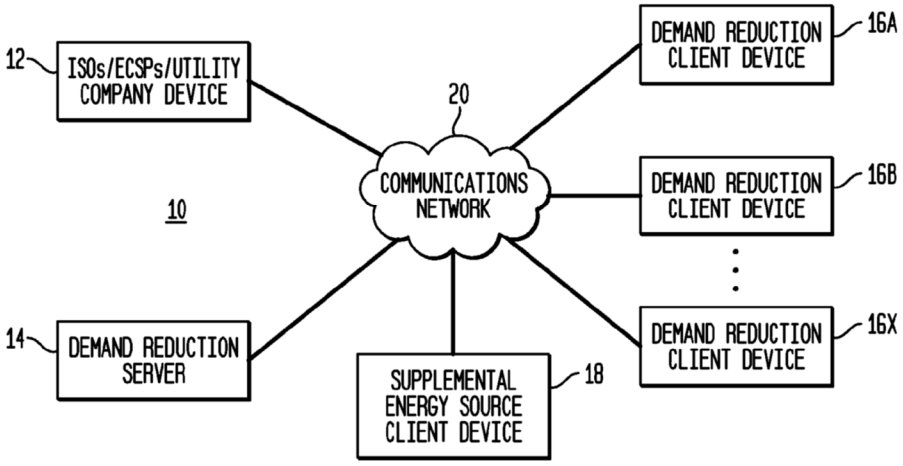


Figure 1 of Montalvo depicts "exemplary system 10 for implementing fully automated demand response, in real time or substantially real time, at one or more end users without human involvement, in accordance with an aspect of the present invention." Ex. 1004 ¶ 55.

As shown in Figure 1 above, system 10 includes computer 12, demand reduction server computer ("DR server") 14, demand reduction client devices ("DR clients") 16 and supplemental energy source client device ("SES client") 18. *Id*. According to Montalvo, "computer 12 may be operated by ISOs and/or their affiliates, such as ECSPs, utility companies and the like, to transmit, over the network 20, electronic message data to the DR server 14 and the DR clients 16." *Id*. ¶ 56.

Figure 3 of Montalvo is reproduced below.

FIG. 3

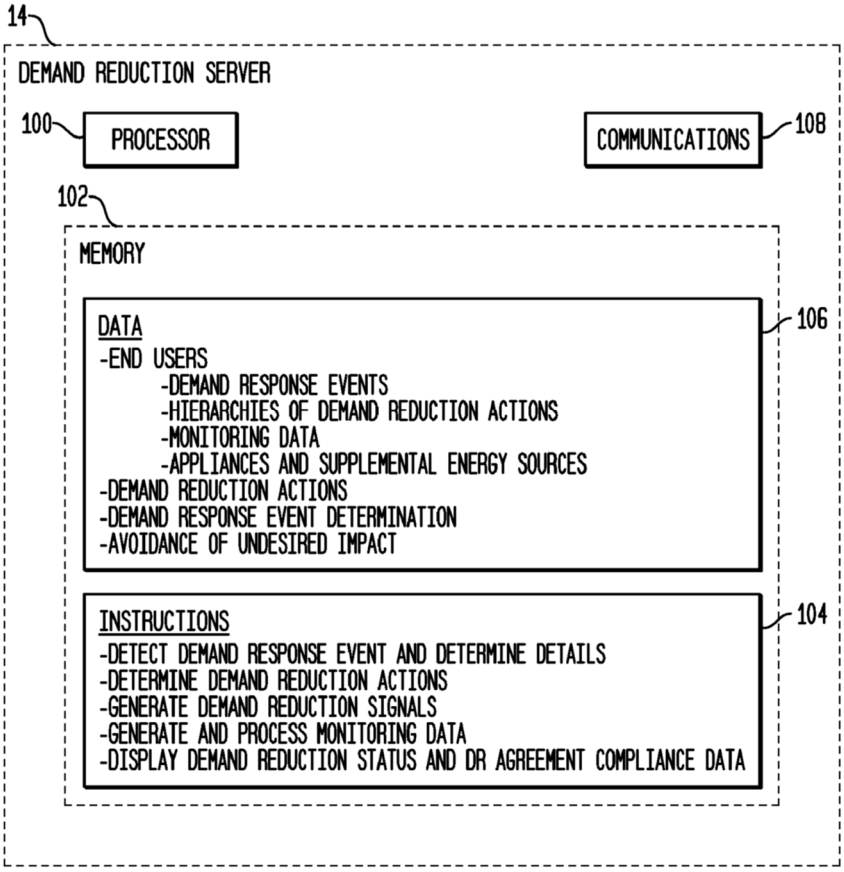


Figure 3 of Montalvo depicts "a block diagram of an exemplary demand reduction server, in accordance with an aspect of the present invention." Ex. 1004 ¶ 34.

As shown in Figure 3 above, DR server 14 may include processor 100, memory 102, communications network interface device 108 and other components typically present in a general purpose computer. *Id.* ¶ 60. According to Montalvo, "data 106 in the DR server may include information describing the terms of DR Agreements between end users and an ISO, utility company and/or ECSP to achieve KW demand reduction goals for particular DR events set forth in the DR Agreement." *Id.* ¶ 68.

> For each DR Agreement, the information in the data 106 describes those demand response events for which the end user

> agrees to reduce KW demand by implementation of one or more demand reduction actions; the demand reduction actions that the end user agrees may be implemented for a specific DR event; and a hierarchy or hierarchies indicating an order in which demand reduction actions are to be implemented for a specific DR event, where the demand reduction actions are ordered in the hierarchy or hierarchies to minimize an undesired impact at the end user during a DR event.

Id.

Figure 5 of Montalvo is reproduced below.

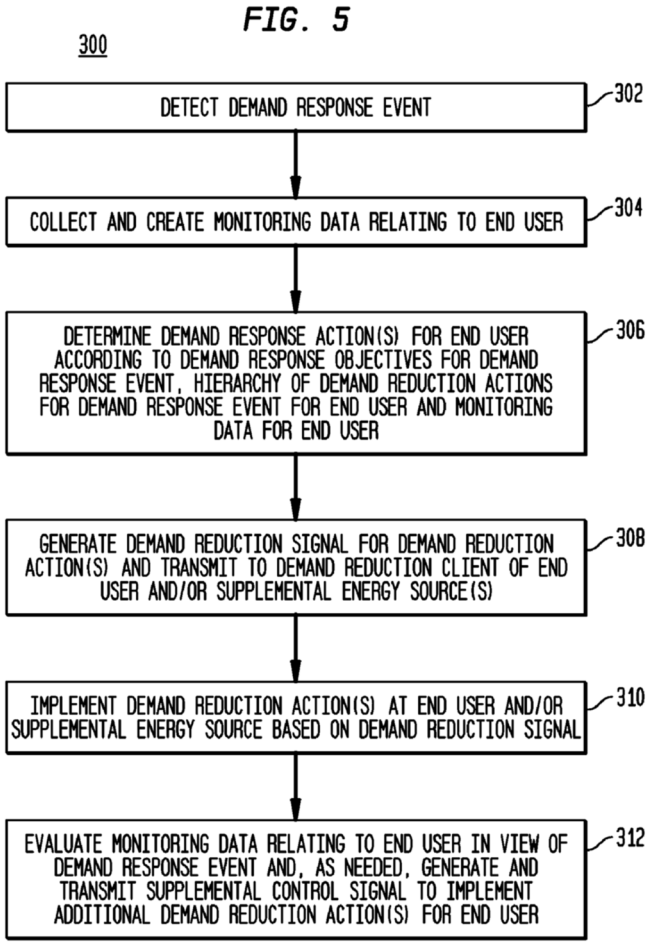


Figure 5 of Montalvo is a flow diagram of "an exemplary process 300 for fully automated demand response . . . in connection with operations performed at components of the system 10 . . . for implementing demand reduction actions at end users 40." Ex. 1004 ¶¶ 36, 98.

In block 302 of the flow chart shown in Figure 5 above, DR client 16 continuously monitors whether electronic message data transmitted over the network from an ISO, Utility, and/or ECSP, or like affiliate, is received and, upon determining receipt, immediately transmits the electronic message data over network 20 to DR server 14. *Id.* ¶ 99. Montalvo also explains that DR server 14, in turn, detects the receipt of the electronic message data from DR client 16, and then processes the electronic message data to identify the type and details of a DR event indicated by the electronic message data. *Id.* In block 304, DR server 14 stores the monitoring data, which includes the monitoring data created at DR client 16 that is transmitted to DR server 14, as data 106 in the memory 102. *Id.* ¶ 102.

Processor 100 of DR server 14 "may use the monitoring data to determine demand reduction actions for end users for a DR event." *Id*. In block 306, processor 100 of server 14 "may automatically determine one or more demand reduction actions to be implemented at an end user 40 for the DR event determined in block 302." *Id.* ¶ 103. According to Montalvo:

> The demand reduction actions are desirably determined to minimize undesired impact at the end user and in accordance with the demand response objectives for the DR event, a hierarchy or hierarchies of demand reduction actions for the DR event that may be implemented for the end user and the monitoring data relating to the end user.

Id. In block 308, "the processor 100 of the DR server 14 generates, and transmits over the network 20, a demand reduction action signal to implement the demand reduction action(s) determined at block 306." *Id.* ¶ 122. In block 310, DR client 16 may generate at, and output from, generator 160 control data and/or control signals, based on the demand reduction action signal received from DR server 14, to implement the

demand reduction action(s) indicated by the received demand reduction signal. *Id.* ¶ 124.

2. APC-Tariff (Ex. 1005)

a. Overview

APC-Tariff is titled "Standard Rate Schedules Terms and Conditions of Standard Service Governing Sale of Electricity in Virginia" by Appalachian Power Company ("Company"). Ex. 1005, 4, 11.[8] The portions of APC-Tariff that the Petition and Patent Owner's Preliminary Response discuss relate to the "Optional Rider PSEDR (Peak Shaving and Emergency Demand Response Rider)." Ex. 1005, 221; *see, e.g.*, Pet. 9–10, 13, 29–30; Prelim. Resp. 19–25. According to APC-Tariff, PSEDR "[p]rogram participants must have the ability to curtail load under the provisions under this Schedule" and "[e]ach customer electing to participate in the program shall contract for a definite amount of PSEDR capacity, not to exceed the customer's normal demand capable of being curtailed." Ex. 1005, 221. Under the PSEDR program, "[t]he minimum PSEDR capacity contracted for under this Rider will be 100 kW." *Id*. at 222.

Under the PSEDR program, "[t]he Company reserves the right to call for (request) customers to curtail their PSEDR load when an Emergency Mandatory Load Management Reduction Action has been issued by PJM,"[9] or "when, in the sole judgment of the Company, conditions exist that require the Company to take steps to reduce the load." *Id*. at 221. According to

[8] Page numbers cited for Exhibit 1005 are to the numbers added to the document by Petitioner.

[9] "PJM" as used in APC-Tariff, refers to PJM Interconnection, LLC, a regional transmission operator. *See* Ex. 1005, 105.

APC-Tariff, customers may choose the "Guaranteed Load Drop (GLD)" method to measure the curtailed demand, under which they "must designate a Guaranteed Load Drop (GLD), which amount shall be the minimum demand reduction that the customer will provide for each hour during a curtailment event or during a curtailment test." *Id*. at 222. Alternatively, customers may agree to reduce load to or below the Firm Service Level (FSL). *Id*. at 223. Under this method, the customer must designate an Available Curtailable Demand (ACD), which is the difference between a Firm Service Level Peak Load Contribution (PLC) and the FSL. *Id*. According to APC-Tariff, "[t]he customer's PLC will be calculated each year as the average of its load during PJM's five (5) highest daily peak loads during the twelve (12) month period ended on the most recent October 31, adjusted to add-back any load curtailments requested by the Company during those five (5) hours." *Id*.

b. Status as Printed Publication

According to Petitioner, APC-Tariff "is a certified copy of a revised tariff document associated with a public record of the Virginia State Corporation Commission ('SCC'), filed January 14, 2015, and made available pursuant to a Final Order dated November 26, 2014, in case number PUE-2014-00026." Pet. 8 (citing Ex. 1005, 1; Ex. 1016, 1; Ex. 1019, 47; Ex. 1025, 1). Petitioner contends that "APC-Tariff qualifies as a printed publication and as prior art to the '433 Patent under at least 35 U.S.C. §102(a)(1)–(2)," because it "was publicly available for in person inspection and on the SCC website as early as January 14, 2015," "the public was put on notice of PUE-2014-00026, the record including APC-Tariff,"

and "a POSA exercising reasonable diligence could easily obtain copies with no reasonable expectation of confidentiality or limitation." *Id*. at 9.

Patent Owner challenges the status of APC-Tariff as prior art, arguing that "the Petition has not demonstrated with particularity that the specific APC-Tariff document was actually publicly available as of the purported publication date." Prelim. Resp. 63. Patent Owner argues that "the Petition does not present any supporting evidence of the ***specific*** APC-Tariff document being published or otherwise publicly accessible on the alleged publication date." *Id*. at 61. Patent Owner further argues that "the Petition provides no explanation or supporting evidence to indicate whether any of the various dates that are printed on the APC-Tariff correspond to a date of public availability." *Id*. at 62–63.

As the Board has held in a precedential decision, "at 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) ("*Hulu*").

On this record, we agree with Patent Owner that Petitioner fails to provide evidence sufficient to show, even for purposes of institution, that APC-Tariff was publicly accessible before the critical date and, as a result, we determine that Petitioner fails to sufficiently establish that APC-Tariff qualifies as a printed publication. *See Hulu* at 13.

We begin by observing that the Petition never cites or analyzes the *Hulu* decision and never squarely addresses whether APC-Tariff was

publicly *accessible*. At most, Petitioner presents some evidence that APC-Tariff was publicly *available*, because it was purportedly required to be available "for public inspection in person and on the Commission's website," per a Final Order of the SCC dated November 26, 2014. Pet. 8 (citing Ex. 1019, 47; Ex. 1025, 1; Ex. 1005, 1; Ex. 1016, 1). But public *accessibility*, the touchstone for status as a printed publication (*see Hulu* at 13), requires more than establishing that documents were available to the public. *See Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 773 (Fed. Cir. 1998) ("'[P]ublic accessibility' requires more than technical accessibility."). As our reviewing court has explained, it is "critical" that there be "some evidence that a person of ordinary skill could have reasonably found" the reference. *Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1369, 1372 (Fed. Cir. 2019). In other words, even assuming that Petitioner's evidence were adequate to show that APC-Tariff was technically available to the public in or about January 2015 via the SCC website, such evidence fails to support a finding that an ordinary artisan could have located APC-Tariff with reasonable diligence.

Even Petitioner's contention that APC-Tariff was publicly available on the SCC website as early as January 2015 is premised on scant evidence. *See* Pet. 8. For example, Petitioner does not provide any testimony or evidence from a custodian of these records (or of a person otherwise having knowledge of the maintenance of such documents on the SCC website). *See id.* Furthermore, nothing in the record indicates the availability of APC-Tariff on the SCC website contemporaneously archived at the alleged time

of publication, for example, by the Wayback Machine,[10] which the Federal Circuit and the Board have relied on to validate websites as a source of prior art in proceedings. *See, e.g., In re Bhagat*, 726 F. App'x 772, 775 (Fed. Cir. 2018) (non-precedential); *see also, e.g.*, *BMW of N. Am. LLC v. Stragent, LLC*, IPR2017-00677, Paper 32 at 45–46 (PTAB June 13, 2018) (Final Written Decision).

Instead of evidence of APC-Tariff being uploaded to the SCC website as of the relevant time period, Petitioner provides a document purporting to be a documents list for the case number that is listed on APC-Tariff. Pet. 8 (citing Ex. 1025). This documents list appears to be a docket for that case number, with a listing of documents by "Document Name" and "Date Filed." *See* Ex. 1025. The documents list itself also bears a date and time (presumably when it was accessed and printed by Petitioner's counsel) of "September 05, 2023 06:00:13 PM." *See id*. at 1. Because Petitioner provides no testimony in this regard, we are left to simply assume that all of the documents on this list were not only filed on their listed dates but were in fact publicly available on the SCC website on or about the date of their filing.

Petitioner also provides, as part of Exhibit 1005, a certification from the Virginia SCC (dated September 6, 2023) that the document is "a true copy of Clean and Blackline Versions of the Revised Tariffs and Terms and Conditions of Service and, as applicable, Supporting Workpapers (parts 1 through 6) dated January 14, 2015 relative to Appalachian Power Company

[10] The Wayback Machine is a service provided by the Internet Archive that permits searches of its digital library of archived Internet websites. *See* http://web.archive.org (last visited February 27, 2024).

in Case Number PUE-2014-00026." Ex. 1005, 1. But regardless of whether the document provided by Petitioner is authentic, nothing in Exhibit 1005 gives any indication that such document was, in fact, available on the SCC website as of any relevant date.

Moreover, even if we were to assume that APC-Tariff was uploaded to the SCC website on or about the filing date indicated, Petitioner provides no evidence of *how* an interested member of the public would have located that document on the SCC website. In that regard, evidence of cataloging and indexing can sometimes play a significant role in determining whether a reference qualifies as a printed publication. *See, e.g.*, *Acceleration Bay*, 908 F.3d at 774 (in assessing public accessibility, considering whether a reference is "meaningfully indexed such that an interested artisan exercising reasonable diligence would have found it") (citing *In re Cronyn*, 890 F.2d 1158, 1161 (Fed. Cir. 1989)).

The record before us, however, is devoid of any evidence of indexing or, in particular, that a query of the SCC website in January 2015 (or at any point before the critical date of the '433 patent), using any combination of topic search words short of a search by docket number, would have led to APC-Tariff appearing in the search results. Under similar circumstances, our reviewing court has concluded that a patent challenger failed to demonstrate public accessibility. *See Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1350 (Fed. Cir. 2016) (finding insufficient evidence of public accessibility for an asserted Internet reference where the patent challenger had not put forth evidence demonstrating that a search would have led to the reference). Thus, even if we were to credit Petitioner's representations that APC-Tariff was available on the SCC website as of

January 2015, Petitioner would have demonstrated merely technical accessibility, which means that "someone could theoretically find [APC-Tariff] on the Internet." *Samsung Elecs. Co.*, 929 F.3d at 1369. Yet, as noted above, "public accessibility requires more than technical accessibility." *Id.* (quoting *Acceleration Bay*, 908 F.3d at 773). Petitioner fails to identify evidence showing that an ordinarily skilled artisan, exercising reasonable diligence before the critical date of the '433 patent, would have located APC-Tariff from the SCC website using "common search terms." Notably, the title of the document itself is not at all illuminating as to its contents. *See* Ex. 1005. Thus, even in this scenario, Petitioner still would fail to establish "meaningful[ ] index[ing] such that an interested artisan exercising reasonable diligence would have found [APC-Tariff]." *See Acceleration Bay*, 908 F.3d at 774.

Petitioner also asserts that "persons of skill in the art . . . accessed and cited to the record of PUE-2014-00026 in various energy related papers" prior to the critical date of the '433 patent. Pet. 8–9 (citing Ex. 1021, 2, 7; Ex. 1023, 62; Ex. 1024, 19; Ex. 1034, 47). Petitioner posits that these citations are evidence that APC-Tariff "was publicly available." *Id.* at 9. Petitioner's reliance on such citations is unavailing. All of those citations are either to a "[c]ase summary" for that case number or merely to the docket itself. *See* Ex. 1021, 7 (citing to "[c]ase summary"). Ex. 1023, 77 (same); Ex. 1024, 19–20 (same); Ex. 1034, App. B, at 47 (cite to docket). Accordingly, there is no indication of what document(s) were accessed or how (if at all) they relate to the document relied upon by Petitioner in this matter as Exhibit 1005. Moreover, even if Petitioner had shown actual access to the APC-Tariff document by certain entities, we are left to

speculate as to whether these entities located the document because they were already aware of its existence. *Cf. Samsung Elecs. Co.*, 929 F.3d at 1372 (stating that a reference "is not publicly accessible if the only people who know how to find it are the ones who created it").

For the foregoing reasons, we find that Petitioner has failed to meet its burden, as set forth in *Hulu*, of providing particular evidence sufficient to establish a reasonable likelihood that APC-Tariff was publicly accessible before the critical date of the '433 patent and, therefore, that there is a reasonable likelihood that it qualifies as a printed publication.

E. Asserted Obviousness

1. Ground 1: Obviousness of Claims 1–12, 17, 19, and 20 over Montalvo and APC-Tariff

Petitioner contends that claims 1–12, 17, 19, and 20 are unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Montalvo and APC-Tariff. Pet. 12–57. For the reasons explained herein, we are not persuaded that Petitioner has established a reasonable likelihood of establishing unpatentability of at least one of these claims on this basis. Our reasoning is that Petitioner fails to establish that the combination of Montalvo and APC-Tariff Petitioner teaches or suggest at least "wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval," as recited in all of the independent claims, because (a) Petitioner does not satisfy its burden, even at this preliminary stage, that APC-Tariff qualifies as a printed publication (*see supra* Section II.D.2.b); and (b) even if Petitioner were to meet its burden on showing that APC-Tariff is a printed publication, Petitioner's

showing as to the combined teachings of Montalvo and APC-Tariff is nevertheless deficient.

The independent claims recite "minimum power thresholds" that are each "associated with a time interval" and a "power consumption target . . . for each time interval," "wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval." Ex. 1001, 59:10–14, 59:20–24 (claim 1). As we determine above, based on the parties' agreed proposed construction, a "minimum power threshold" means "a minimum amount of power a load must use during an associated time interval." *Supra* Section II.C; *see also* Ex. 1008, 1 (district court claim construction). Thus, the '433 patent claims require that a load must use a minimum amount of power for each time interval, with a target for consumption in that time interval that is at least as high as that minimum required usage.

Petitioner contends that Montalvo combined with APC-Tariff teaches or suggests minimum power thresholds associated with time intervals. Pet. 28–32, 35–36. In particular, Petitioner asserts that Montalvo teaches that entities, such as utility companies, enter into Demand Reduction ("DR") agreements with end users, and Montalvo "further notes that these entities typically require that an end user have the capability of reducing at least about 100 kW-200 kW demand during a DR event to become a party to these DR agreements." *Id.* at 29 (citing Ex. 1004 ¶¶ 3, 22). Petitioner then contends that "Montalvo's minimum demand reduction requirements imposed for an end user to enter into a DR agreement correspond to a commitment for the minimum amount of power the end user will use in order to be able to curtail the promised amount." *Id.* Petitioner asserts that

"[t]his was well-understood by [persons of ordinary skill in the art] to be a requirement for entering into DR agreements." *Id.* (citing Ex. 1003 ¶ 108).

Petitioner additionally argues that "APC-Tariff's teachings combined with Montalvo's further renders obvious requiring a minimum amount of power consumption corresponding to the promised curtailment amount." *Id.* In particular, Petitioner notes that APC-Tariff's PSEDR (Peak Shaving and Emergency Demand Response Rider) program "has committed demand reduction capacity requirements" in which "[e]ach customer electing to participate in the program shall contract for a definite amount of PSEDR capacity, ***not to exceed the customer's normal demand capable of being curtailed***." *Id.* at 30 (citing Ex. 1006, 221). Petitioner then posits:

> A [person of ordinary skill in the art] would understand from these combined teachings that Montalvo's end user with a DR agreement would be consuming at least the amount of load (the "normal demand capable of being curtailed") for the end user to be able to implement the necessary DR action (e.g., Montalvo's demand reduction amount). EX1003, ¶110. A POSA would have thus recognized that the "amount of electrical load to be reduced" taught in Montalvo identifies a "*minimum power threshold*" corresponding to the amount at or above 100–200 KW. *Id.*

Id.

Thus, Petitioner does not contend that either Montalvo or APC-Tariff expressly describes a minimum power usage requirement (or "minimum power threshold"), but asserts that this would have been understood by the ordinarily skilled artisan because, according to Petitioner, Montalvo and APC-Tariff describe demand reduction capacity requirements. *See* Pet. 28–30. In other words, Petitioner maps the claimed minimum power threshold to a demand reduction capacity requirement. Petitioner contends that this "is

consistent with how the '433 Patent understands the concept of '*minimum power threshold*.'" *Id.* at 30. In that regard, Petitioner states:

> According to the '433 Patent, the "minimum power threshold" refers to "the load need[ing] to use at least the amount of power subject to the option" to reduce the amount of power delivered. EX1001, 43:50–60. In a specific example corresponding to Figure 12, the '433 Patent illustrates a minimum power threshold of 5 MW, such that "the loads must be able to operate at a target power consumption level that is equal to or greater than the 5 MW minimum power threshold . . . in order to be able to satisfy the power option if it is exercised." EX1001, 51:24–34. Because the load is operating at the target power consumption level (or greater), the power entity can reduce the load's power consumption by any value from zero to 5 MW. *Id.*, 51:34–36. For example, the power entity can exercise the option and "reduce the power consumed by the loads by 3 MW as a way to load balance." EX1001, 51:36–47. EX1003, ¶111.

Id. at 30–31; *see also id.* at 36 ("In other words, an end user commits to consume (its '*power consumption target*') at least that amount of load for Montalvo's end user to be able to implement the necessary DR action in response to receipt of a DR event notification.").

Patent Owner counters that neither Montalvo nor APC-Tariff discloses a minimum amount of power that a load must use during an associated time interval. Prelim. Resp. 46. With regard to Montalvo, Patent Owner notes that although Montalvo describes, in the background, that "ISOs, utility companies and/or ECSPs typically require that an end user have the ***capability*** of reducing at least about 100 KW-200KW demand during a DR event," Montalvo "does not provide any details for what this 'typically' required 'capability' actually requires of an end user." *Id.* at 47. Indeed, as Patent Owner notes, "rather than disclose required power usage levels, much less the claimed minimum power thresholds, Montalvo

explains that participation in its DR Agreements is ***optional*** by repeatedly emphasizing that its system permits end users (i.e., loads) to 'partially or fully opt out of a DR event.'" *Id.* at 47–48 (citing Ex. 1004 ¶¶ 70, 85, 137–138; Ex. 2001 ¶ 95).

We agree with Patent Owner that Petitioner has not persuasively shown, even for purposes of institution, that Montalvo teaches or suggests a minimum power threshold. Although Montalvo does mention an end user having a capability of reducing demand by "at least about 100 KW-200 KW" during a DR event as a requirement to enter into a DR agreement, such mention is in the "Background of the Invention" portion of the disclosure, wherein Montalvo describes such a requirement as undesirable because it excludes, for example, residential customers. Ex. 1004 ¶ 22. Montalvo then describes and claims a system with a "fully automated demand response to reduce KW demand at end users" without any such required capability of any end user. *Id.* ¶ 41. Instead, Montalvo describes an "aggregate of sub-end users," such as residential homeowners, whose typical usage would not be enough to qualify them to participate in a DR agreement. *Id.* ¶¶ 43, 58–59. Montalvo does not describe that any of these end users has committed to a minimum amount of usage for any time period; to the contrary, as Patent Owner persuasively contends, Montalvo's system is optional because end users may opt out: "Montalvo's flexible DR system . . . is designed to minimize the impact of demand reduction actions on end users and to permit end users to opt out of participating in DR events." Prelim. Resp. 52; *see* Ex. 1004 ¶¶ 70, 85, 137–138.

In view of the flexible and optional nature of Montalvo's system, Petitioner additionally invokes the teachings of APC-Tariff as further

rendering obvious "requiring a minimum amount of power consumption corresponding to the promised curtailment amount." Pet. 29. As noted *supra* Section II.D.2.b, however, Petitioner has failed to set forth sufficient evidence to show a reasonable likelihood that APC-Tariff is a printed publication. But even if we were to consider APC-Tariff as prior art, we would conclude that Petitioner has not demonstrated a reasonable likelihood that any challenged claim is unpatentable over the combination of APC-Tariff and Montalvo. Notably, although Petitioner contends that the APC-Tariff describes "committed demand reduction capacity requirements" in which "[e]ach customer electing to participate in the program shall contract for a definite amount of PSEDR capacity, ***not to exceed the customer's normal demand capable of being curtailed***" (Pet. 30 (citing Ex. 1006, 221)), the Petition does not address or discuss the actual requirements of the APC-Tariff's PSEDR program or how it determines compliance with the PSEDR program. This is unsurprising because, as Patent Owner persuasively points out:

> The APC-Tariff never requires a participant in the PSEDR program to use at least a minimum amount of power at any time, much less before a curtailment or DR event occurs, as in the systems and methods claimed in the '433 Patent. . . . Rather, the APC-Tariff only requires that during a curtailment or DR event, a load *ensure that it is operating below a certain maximum level*.

Prelim. Resp. 49 (emphasis added). Thus, the APC-Tariff's PSEDR capacity is a value that is used to determine a *maximum load level* for a customer during a curtailment event, under both the Guaranteed Load Drop (GLD) and Firm Service Level (FSL) calculation methods for determining compliance with the PSEDR program. *See id.* (citing Ex. 2001 ¶¶ 65–77,

97–98). As Patent Owner's declarant explains, under the GLD method, a load need only operate *at or below* the GLD amount during a curtailment event. Ex. 2001 ¶¶ 67–73, 97. And the APC-Tariff is explicit that under the FSL method, "[i]f a customer is operating *at or below* their designated FSL during an event, it will be understood that they have no PSEDR capacity available with which to comply and will not be charged a non-compliance penalty." Ex. 1005, 223 (emphasis added); Ex. 2001 ¶¶ 74–75, 99. Thus, even if we were to consider APC-Tariff as prior art, we conclude that Petitioner's arguments and evidence based on the combined teachings of Montalvo and APC-Tariff are insufficient to support institution of trial.

For the foregoing reasons, based on the current record, we determine that Petitioner has not established a reasonable likelihood of prevailing in showing that independent claims 1, 17, and 20 are unpatentable over the combination of Montalvo and APC-Tariff. Petitioner's arguments and evidence for the dependent claims on this ground (Pet. 39–57) do not cure the deficiencies in Petitioner's showing for the independent claims. Accordingly, Petitioner has not established a reasonable likelihood of prevailing in showing that any of claims 1–12, 17, 19, and 20 are unpatentable over the combination of Montalvo and APC-Tariff.

2. Grounds 2 and 3: Obviousness of Claims 13–15, 16, and 18

Petitioner contends, in Ground 2, that dependent claims 13–15 would have been obvious over the combination of Montalvo, APC-Tariff, and Day. Pet. 57–67. Petitioner also contends, in Ground 3, that dependent claims 16 and 18 would have been obvious over the combination of Montalvo, APC-Tariff, and Sowell. *Id.* at 67–75.

As we determine above, Petitioner's showing is insufficient to institute trial on the independent claims. The dependent claims incorporate the same limitations as the independent claims, and Petitioner's arguments and evidence for these dependent claims (Pet. 57–75) do not cure the deficiencies in Petitioner's showing for the independent claims. Accordingly, Petitioner has not established a reasonable likelihood of prevailing in showing that any of claims 13–15, 16, and 18 are unpatentable over the combination of Montalvo, APC-Tariff, and Day (claims 13–15) or Montalvo, APC-Tariff, and Sowell (claims 16 and 18).

III. CONCLUSION

For the foregoing reasons, because we determine that the information presented in the record does not establish a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim of the '433 patent, we do not institute an *inter partes* review.

IV. ORDER

For the reasons given, it is:

ORDERED that the Petition is *denied* and no trial is instituted.

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