

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PACIFICORP,
Petitioner,

v.

BIRCHTECH CORP.,
Patent Owner.

IPR2025-00688
Patent 10,933,370 B2

Before KRISTINA M. KALAN, ZHENYU YANG, and DAVID COTTA,
Administrative Patent Judges.

KALAN, *Administrative Patent Judge.*

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

I. INTRODUCTION

PacifiCorp (“PacifiCorp”), Interstate Power & Light Company (“IPL”), MidAmerican Energy Company (“MidAmerican”), WEC Energy Group, Inc. (“WEC”), and Wisconsin Power & Light Company (“WPL”) (collectively, “Petitioner”)¹ filed a Petition (Paper 1, “Pet.”), seeking *inter partes* review of claims 1–18 of U.S. Patent No. 10,933,370 B2 (Ex. 1001, “the ’370 patent”). Birchtech Corp. (“Patent Owner”), formerly known as Midwest Energy Emissions Corp. (“ME2C”) (Paper 8, 2), filed a Preliminary Response. Paper 17 (“Prelim. Resp.”). Petitioner also filed a petition for *inter partes* review in IPR2025-00687, challenging the same claims of U.S. Patent 10,933,370 challenged in this proceeding. IPR2025-00687, Paper 1. Pursuant to the Memorandum on Interim Processes for PTAB Workload Management (March 26, 2025), *available at* <https://uspto.gov/sites/default/files/documents/InterimProcesses-PTABWorkloadMgmt-20250326.pdf>, Patent Owner requested that the Petition be discretionarily denied (along with the petition in IPR2025-00687). Paper 14. Petitioner opposed. Paper 15. The Acting Director determined that discretionary denial was not appropriate and referred each case (IPR2025-00687 and IPR2025-00688) to the panel. Paper 18 (“Referral Decision”).

After the Referral Decision, and with our authorization (Ex. 3001), Petitioner filed a Reply to the Preliminary Response (Paper 19, “Pet.

¹ IPL and WPL subsequently settled their dispute with Patent Owner and have been terminated from this proceeding. Paper 25. WEC and MidAmerican also settled their disputes with Patent Owner and have been terminated from this proceeding. Papers 33, 42. Accordingly, “Petitioner” as used herein refers only to the remaining Petitioner, namely, PacifiCorp.

Reply”), and Patent Owner filed a Sur-reply to Petitioner’s Reply (Paper 20, “Sur-reply”). We instituted *inter partes* review in this proceeding (Paper 29) and in IPR2025-00687 because, on the merits, we determined that Petitioner had shown a reasonable likelihood of prevailing in all its challenges.

Patent Owner sought Director Review of the Referral Decision. Paper 34, 1 (requesting “Director Review of the Director’s August 22, 2025 Decision Referring the Petition to the Board (‘Referral Decision’)”). Patent Owner argued that institution of IPR2025-00687 and IPR2025-00688 “should be discretionarily denied.” *Id.* at 5. Petitioner opposed. Paper 37. The Director granted review and found that “granting institution of two petitions that each challenge the same claims of the ’370 patent and ’218 patent²” was an “abuse[] of discretion.” Paper 40 (“Remand”), 1. The Director remanded the cases “to the Board panel to determine which of the two petitions challenging each of the ’370 and ’218 patents to institute.” *Id.* at 3.

Pursuant to the Director’s instruction that we choose only one of the two petitions challenging the ’370 patent to institute, and for the reasons set forth below, we choose to institute review of the ’370 patent in IPR2025-00687, and not in this proceeding.

A. Real Parties in Interest

Petitioner identifies PacifiCorp, IPL, MidAmerican, WEC, and WPL, as well as Alliant Energy Corporation, Alliant Energy Corporate Services, Inc., Berkshire Hathaway Energy Company, MidAmerican Funding, LLC,

² Patent 10,926,218 B2, challenged in IPR2025-00717 and IPR2025-00718.

MHC Inc., PPW Holdings LLC, and Wisconsin Public Service Corporation as real parties in interest. Pet. 1–2.

Patent Owner identifies “MES, Inc.” as the real party in interest. Paper 8, 1.

B. Related Matters

Petitioner filed a concurrent petition (IPR2025-00687),³ seeking *inter partes* review of the same claims challenged in this proceeding. Pet. 3. Concurrently herewith, we re-institute trial after remand on the concurrent petition. IPR2025-00687, Paper 43.

The parties identify the following matters as related to this proceeding:

Midwest Energy Emissions Corp. et al. v. Arthur J. Gallagher & Co. et al., No. 1:19-cv-01334 (D. Del.) (“the Delaware Action”);

Midwest Energy Emissions Corp. v. Tucson Electric Power Co. et al., No. 3:24-cv-08145 (D. Ariz.);

Midwest Energy Emissions Corp. v. Berkshire Hathaway Energy Co. et al., No. 4:24-cv-00248 (S.D. Iowa);

Midwest Energy Emissions Corp. v. Ameren Corporation et al., No. 4:24-cv-00980 (E.D. Mo.);

³ Petitioner filed an explanation regarding the necessity of multiple petitions. Paper 2. In its briefing before the panel, Patent Owner did not challenge that multiple petitions are necessary. *See generally* Prelim. Resp. This is consistent with the Director’s determination that the decision whether to deny institution because a petitioner filed multiple petitions is best raised and resolved through the process involving a bifurcated procedure for considering discretionary issues. *See* USPTO Memorandum, Interim Process for PTAB Workload Management (March 26, 2025), <https://uspto.gov/sites/default/files/documents/InterimProcesses-PTABWorkloadMgmt-20250326.pdf>.

In re Midwest Energy Emissions Corp. Patent Litigation, No. 4:24-md-3132 (S.D. Iowa) (consolidating the Iowa, Arizona, and Missouri cases);

Midwest Energy Emissions Corp. v. Berkshire Hathaway Energy Company et al., No. 2:25-cv-00015 (D. Wy.);

Midwest Energy Emissions Corp. v. Wisconsin Power and Light Company, No. 3:25-cv-00026 (W.D. Wis.);

Midwest Energy Emissions Corp. v. MidAmerican Energy Company et al., Case No. 4:24-cv-00243 (S.D. Iowa); and

Birchtech Corp. f/k/a Midwest Energy Emissions Corp. v. Evergy, Inc. et al., Case No. 4:25-cv-00050 (W.D. Mo.).

Pet. 5–6; Paper 8, 2–3.

Petitioner previously filed other petitions for *inter partes* review, challenging two other patents owned by Patent Owner. Pet. 3. *Id.* at 3. The Board instituted trial in those proceedings.

Petitioner also brings to our attention several *inter partes* review proceedings, with petitions filed by other entities, including IPR2020-00832 and IPR2020-00834, challenging claims of the '114 patent; and IPR2020-00926 and IPR2020-00928, challenging claims of a parent patent of the '370 patent. Pet. 4–5. According to Petitioner, the Board granted institution but terminated those proceedings because the parties settled. *Id.*

C. The '370 patent

The '370 patent “relates to methods and materials for the removal of pollutants from flue gas or product gas from a gasification system. In particular, mercury is removed from gas streams generated during the

burning or gasification of fossil fuels by highly reactive regenerable sorbents.” Ex. 1001, 1:40–45.

The ’370 patent states:

The combustion and gasification of fossil fuel such as coal generates flue gas that contains mercury and other trace elements that originate from the fuel. The release of the mercury (and other pollutants) to the environment must be controlled by use of sorbents, scrubbers, filters, precipitators, and other removal technologies.

Id. at 1:49–54.

The ’370 patent acknowledges: “Several types of mercury control methods for flue gas have been investigated, including injection of fine sorbent particles into a flue gas duct and passing the flue gas through a sorbent bed.” *Id.* at 2:5–8. According to the ’370 patent, however, because sorbents in the existing carbon injection systems are initially unreactive, they “must be used in large amounts, at high sorbent-to-mercury ratios, to effectively capture the mercury.” *Id.* at 2:26–32. Thus, “there remains a need for more economical and effective mercury removal technology.” *Id.* at 2:38–39.

The ’370 patent describes a halogen/halide promoted activated carbon sorbent that is highly effective for the removal of mercury from flue gas streams. *Id.* at 2:51–53. According to the ’370 patent, the “sorbent comprises a new halide-modified carbon form containing a reactive compound produced by the reaction of bromine (or halide or other halogen) with the carbon.” *Id.* at 2:53–56.

The ’370 patent states: “Optional secondary components and alkali may be added to further increase reactivity and mercury capacity,” and discloses that “the optional secondary component is selected from the group

consisting of Group V halides, Group VI halides, HI, HBr, HCl, and combinations thereof.” *Id.* at 2:56–58, 3:34–37.

The ’370 patent provides a promoted carbon sorbent “comprising a base activated carbon that has reacted with a promoter selected from the group consisting of halides, halogens, and combinations thereof.” *Id.* at 2:65–3:1. In one embodiment, “the promoter is selected from the group consisting of Br₂, a Group V bromide, a Group VI bromide, and combinations thereof.” *Id.* at 4:5–7.

The ’370 patent states that its invention “provides for cost-effective removal of pollutants including mercury, using sorbent enhancement additives and/or highly reactive sorbents, with contact times of seconds (or less), and that may be regenerated and reused.” *Id.* at 2:38–43.

D. Illustrative Claim

Independent claim 1 is illustrative of the claimed subject matter and is reproduced below.

1. [1(Pre)] A method for separating mercury from a mercury-containing gas, the method comprising:

[1(a)] combusting a mixture of coal and an additive in a combustion chamber, to form the mercury-containing gas, wherein the additive is chosen from halides, halogens, salts thereof, and combinations thereof

[1(b)] adding a particulate sorbent material comprising activated carbon into the mercury-containing gas,

[1(c)] wherein a weight ratio of the additive added to the coal, added to the combustion chamber, or a combination thereof, to an amount of the sorbent material added to the mercury-containing gas is from about 1:100 to about 30:100;

[1(d)] contacting mercury in the mercury-containing gas with the sorbent material, to form a mercury-sorbent; and

[1(e)] separating the mercury-sorbent from the mercury-containing gas.

Ex. 1001, 35:49–65 (Petitioner’s bracketed designations).

E. Asserted Challenges to Patentability

Petitioner asserts the following challenges to patentability:

Claims Challenged	35 U.S.C. §	Reference
1–4, 6–8, 10, 11, 13–18	102	Baldrey ⁴
1–18	103	Baldrey, Olson-646 ⁵
1–18	103	Sjostrom, ⁶ Olson-646
1–18	103	Sjostrom, Olson-646, Eckberg ⁷

Pet. 10. In support of its unpatentability challenges, Petitioner relies on the Declaration of Stephen Niksa, Ph.D. (Ex. 1002).

II. ANALYSIS

Petitioner filed an explanation regarding the necessity of multiple petitions challenging the ’370 patent. Paper 2 (“Expl.”). In its briefing to

⁴ US 2011/0030592 A1, published Feb. 10, 2011, Ex. 1015 (“Baldrey”).

⁵ US 2006/0048646 A1, published Mar. 9, 2006, Ex. 1012 (“Olson-646”).

⁶ Sjostrom, Sharon, *Full Scale Evaluations of Mercury Control Technologies with PRB Coals*, Track A, Session A3 (Mercury – Control), Presentation A3b, EUEC: 8TH ELECTRIC UTILITIES ENVIRONMENTAL CONFERENCE (Tucson, Arizona: January 25, 2005), Ex. 1010 (“Sjostrom”).

⁷ Eckberg, Craig, et al., *Mercury Control Evaluation of Halogen Injection into a Texas Lignite-Fired Boiler*, Track A, Session A3 (Mercury – Control), Presentation A3c, EUEC: 8TH ELECTRIC UTILITIES ENVIRONMENTAL CONFERENCE (Tucson, Arizona: January 25, 2005), Ex. 1011 (“Eckberg”).

the panel, Patent Owner does not challenge that multiple petitions are necessary. *See generally* Prelim. Resp.

In its Explanation, Petitioner requests “that, if the Board uses its discretion to institute the Petitions, the Board consider the merits of IPR2025-00687 (“Vosteen589/Downs Boiler/Lissianski Petition”) before IPR2025-00688 (“Sjostrom/Baldrey Petition”).” Expl. 3. Further to Petitioner’s request, we first considered the merits of the Vosteen589/Downs Boiler/Lissianski Petition. For the reasons discussed in our concurrently-issued decision in IPR2025-00687, we institute *inter partes* review on the grounds set forth in the Vosteen589/Downs Boiler/Lissianski Petition. We now consider this, the second-ranked Petition filed by the same Petitioner on the ’370 Patent. Exp. 2–3.

In its Explanation, Petitioner provides a chart comparing IPR2025-00687 (“Vosteen589/Downs Boiler/Lissianski Petition”) to IPR2025-00688 (“Sjostrom/Baldrey Petition”).” Expl. 3. The chart is reproduced below:

Rank	First: IPR2025-00687	Second: IPR2025-00688
Petitions	Vosteen589 / Downs-Boiler / Lissianski Petition	Sjostrom / Baldrey Petition
Assumed Priority Date for '370 Patent	August 30, 2004 (based on filing U.S. Prov. App. No. 60/605,640)	No earlier than April 12, 2018 (based on filing of U.S. Patent App. 15/951,970, which issued into the '370 Patent)
Prior-Art References and Asserted Priority Dates	Vosteen589 EX1005 Pre-AIA: §102(e) (filed 7/24/2002) Downs-Boiler EX1006 Pre-AIA: §102(e) (Priority 3/22/2004) Lissianski EX1014 Pre-AIA: §102(e) (Priority 1/6/2004) Starns EX1008 Pre-AIA: §102(a), 102(b) (published by Aug. 2002) Mass-EPA EX1009 Pre-AIA: §§102(a)-(b) (published by Jan. 2003)	Baldrey EX1015 Pre-AIA: §§102(a), 102(b), 102(e) Post-AIA: §102(a)(1) (published 2/10/2011) Sjostrom EX1010 Pre-AIA: §§102(a)-(b) Post-AIA: §102(a)(1) (published by Feb. 2005) Eckberg EX1011 Pre-AIA: §§102(a)-(b) Post-AIA: §102(a)(1) (published by Feb. 2005) Olson-646 EX1012 Pre-AIA: §§102(a)-(b) Post-AIA: §102(a)(1) (published 3/9/2006)

Id.

Petitioner argues that the Board should institute both petitions because there are material differences between the petitions. Expl. 4. First, Petitioner argues that “Petitioners include two Petitions asserting different priority dates: the Vosteen589/Downs-Boiler/Lissianski Petition [IPR2025-00687] assumes the '370 Patent claims are entitled priority to the filing of the earliest provisional application (August 30, 2004),” while the “Sjostrom/Baldrey Petition [IPR2025-00688] asserts that priority to the 2018 filing of the '370 Patent, because the claims do not have support in earlier-

filed applications.” *Id.* Petitioner also argues: “To limit the issues for the Board, the Vosteen589/Downs-Boiler-Lissianski Petition includes only three primary references and two secondary references” and the “Sjostrom/Baldrey Petition includes only two primary references—one primary reference combined with two secondary references, and one anticipation reference (with a single parallel obviousness ground).” *Id.* “Additionally, the Sjostrom/Baldrey Petition challenges a unique claim (claim 9) that is not challenged in the Vosteen589/Downs Boiler/Lissianski.” *Id.*

Second, Petitioner argues that the two petitions collectively include five petitioners (as of the time of filing), and in total five primary references and four secondary references. Expl 5. In support, Petitioner argues that the “parties joined efforts and filed two petitions for IPR against the ’370 Patent, asserting a limited set of prior-art references, instead of each party individually filing separate petitions. As such, this is not a case of a single petitioner filing multiple IPR petitions.” *Id.*

We have considered Petitioner’s arguments but, in view of the Remand, do not institute *inter partes* review based on the second-ranked petition on this complete record. As stated in the Remand, “Petitioners present ten total grounds challenging the claims of the ’370 patent and thirteen total grounds challenging the claims of the ’218 patent [in IPR2025-00717 and IPR2025-00718].” Remand 3. The Remand cites to the Board’s Trial Practice Guide, which “explains that ‘one petition should be sufficient to challenge the claims of a patent in most situations’ and ‘multiple petitions by a petitioner are not necessary in the vast majority of cases.’” *Id.* (citing Patent Trial and Appeal Board Trial Practice Guide (“TPG”) § II.D.2 (Dec. 12, 2025)). The Remand states: “The TPG further explains that

multiple petitions may be necessary in ‘rare’ cases, such as a ‘priority dispute requiring arguments under multiple prior art references.’ TPG § II.D.2.” *Id.* at 2–3. The Remand determines: “Given that Petitioners had ample room in each petition to present multiple grounds challenging the claims of each patent, this was not a ‘rare’ circumstance that justified the filing of multiple petitions against each patent.” *Id.* at 3. The Remand explains that “absent exceptional circumstances, in a case where there is a dispute over priority date, the Board should either resolve the priority date issue or institute, at most, the first-ranked petition.” *Id.* The Director instructed the Board panel “to determine which of the two petitions” to institute. *Id.* at 4. We interpret the Remand as stating that the Director has determined that only one petition for each patent should have been instituted, and as delegating the discretionary authority to the panel to determine which of the two petitions to institute.

Accordingly, in view of the foregoing and in view of Petitioner’s ranking of this Petition as the second-ranked petition, we deny institution of *inter partes* review.

III. CONCLUSION

Based on the current record, and for the reasons explained above, we deny institution of *inter partes* review.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that no *inter partes* review is instituted on the Petition filed in this proceeding.

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